



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

### Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

### About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

*BOSTON*  
*MEDICAL LIBRARY*  
*8 THE FENWAY*





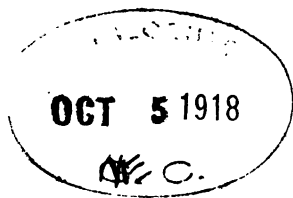
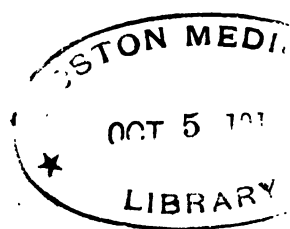
THE JOURNAL  
—OF THE—  
AMERICAN CHEMICAL SOCIETY.

---

GENERAL INDEX  
—TO THE—  
FIRST TWENTY VOLUMES,  
1879-1898,  
—AND TO THE—  
PROCEEDINGS,  
1877-1879.

---

EASTON, PA.:  
THE CHEMICAL PUBLISHING CO.  
1902.



THE earlier volumes of the Journal contained abstracts of papers which had appeared elsewhere. So many of the names of the authors of these papers were erroneously printed that we had to verify all such by reference to the original, unless it was already well known to us. They appear in this index in the correct form, with initials of Christian names supplied, if possible. When it could not be determined whether M. was an initial or the French equivalent of our Mr., it was printed [M.]. In a few cases, articles which it is suspected belong to the same author appear under entries slightly different in form; the two entries under Guyard, and the first and third under Monnet are examples. Had Monnet y Cos written more frequently, it would have been possible to resolve the doubt which prevented the placing all papers by a person under his name in its latest form, according to the established rule. In case of variety in ways of printing certain names, the Royal Society's Catalogue has commonly been followed. But the few Russian names cited have not been rescued from the confusion produced by transliteration into English from both French and German.

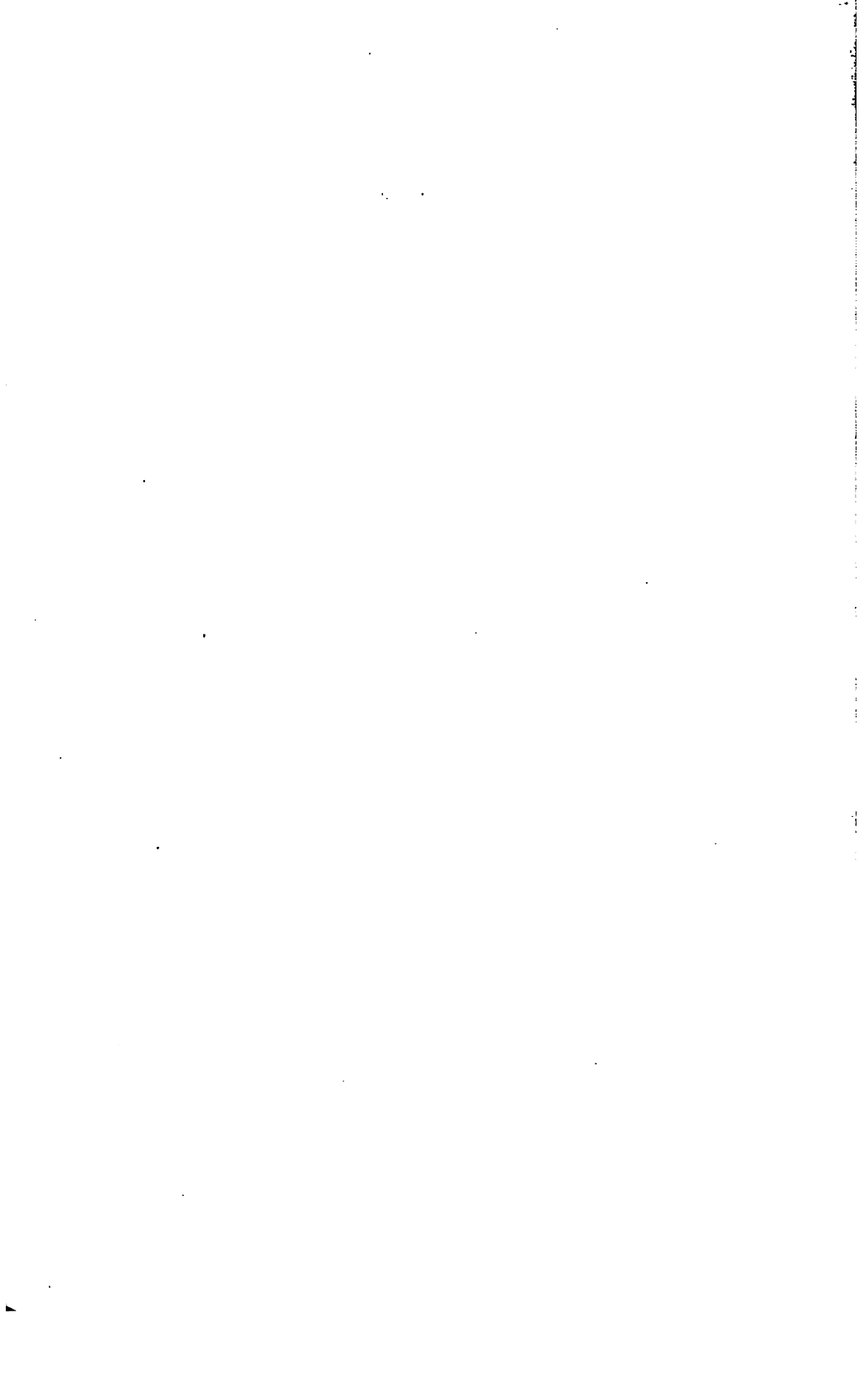
In the index of authors, few liberties have been taken with titles, except in spelling uniformly certain words, such as benzene, on which probably all would now agree. In the index of subjects, it was thought desirable to secure somewhat more uniformity of spelling and nomenclature in the titles of abstracts.

The index has been printed from the original cards which had been prepared directly from the pages of the Journal and afterwards twice verified. Having been arranged alphabetically, they were made ready for the printer by cancelling words common to successive entries, and by changes in order of words and other slight modifications of expressions. In an index so prepared, the compiler sometimes satisfies himself with a sequence and relation of entries not quite so felicitous as if everything had been rewritten, but the figures submitted to the printer cannot be erroneous, except by becoming illegible. In our labor of love for the Society, we thought that accuracy of reference to page and volume was that most desired at our hands. The fact that the preparation of the index was divided somewhat equally between two compilers has lessened the uniformity of treatment which might have been secured otherwise.

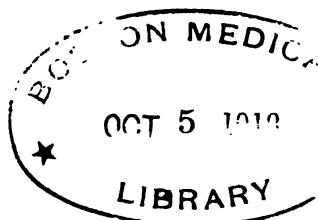
This index includes not only the twenty volumes of the Journal issued in the years 1879 to 1898 inclusive, but also the volumes of an earlier publication of the Society entitled "Proceedings of the American Chemical Society." This earlier publication consisted of two volumes, of which the first appeared in two parts pagged separately. We have also made references to some statements of facts contained in the proceedings of the sections of the Society issued with the later volumes of the Journal; these references have the number of the page enclosed in a parenthesis. The volumes of the Journal are referred to by the numbers from 1 to 20. The volumes of the Proceedings are designated as follows:

- P. 1, Proceedings, Volume I, Part I, 1877.
- P. 1, 2, Proceedings, Volume I, Part II, 1878.
- P. 2, Proceedings, Volume II, 1879.

E. W. M.  
O. F. T.







## INDEX OF AUTHORS.

- ABEL, Sir F. A., and W. H. Deering. On the condition in which carbon exists in steel (abst.), 5, 114: See also Noble, Sir A.
- ADAM, A. Milk in the Paris hospitals (abst.), - - - 8, 62
- ADAM, P. Brominated xylene (abst.), 6, 132: See also Grimaux, E.
- ADAMS, F. D. Presence of chlorine in scapolites (abst.), - - - 1, 391
- ADAMS, M. See Young, S. W.
- ADAMS, M. A. New method for analysis of milk (abst.), - - - 8, 204
- ADOR, E. *iso*-Phthalophenone (abst.), - - - 2, 131, 367
- ADOR, E., and J. M. Crafts. Action of phthalic anhydride on naphthalene in presence of aluminum chloride (abst.), - - - 1, 485
- ADOR, E., and A. Rilliet. Hydrocarbons from methyl chloride and toluene (abst.), 1, 280: Hydrocarbons obtained from methyl chloride and benzene (abst.), - - - 1, 398
- AILLAUD. Analyses of water from Isthmus of Panama (abst.), - - 4, 242
- AITKEN, A. P. Rapid and accurate method of determining moisture and oil in linseed cakes, etc., - - - 16, 114
- AKITT, T. See Mills, E. J.
- ALBERT, H., and L. Siegfried. Determination of reverted phosphoric acid (abst.), - - - 1, 355
- ALBITZKY, A.  $\beta$ -Dipropylacrylic acid from  $\beta$ -dipropylethylenelactic acid (abst.), 7, 83: Coefficient of refraction of the hydrocarbon,  $C_{12}H_{20}$ , from allyldimethylcarbinol (abst.), - - - 7, 85
- ALEXEFF, P. Constitution of the nitro-compounds of the aliphatic series (abst.), 8, 202, 274: Constitutional formula of indigo (abst.), - - - 6, 135
- ALLARY, E. Iodimetry, founded upon the use of permanent standard solutions (abst.), 1, 490: Regeneration of the acid residues from the manufacture of guncotton (abst.), - - - 9, 38
- ALLEN, A. H. Estimation of nitrogen in steel (abst.), 1, 562: Determination of silicon in iron and steel (abst.), 1, 562: Expression of results obtained by Koettstorfer's method, etc. (abst.), 1, 567: On the stability of hypobromite solution, and its use for the titration of oils, etc. (abst.), 6, 99: Methods of examining, and chemistry of, the fixed oils (abst.), 8, 98, 103: Fat of porpoise milk (abst.), 8, 184: Determination of glycerol produced by saponification of fatty oils (abst.), 8, 204: Determination of sulphur in oils (abst.), 10, 44: Detection of saccharin in beer (abst.), 10, 88: Use of the term "normal" in volumetric analysis (abst.), 10, 114: Examination of water for technical purposes (abst.), - - - 10, 180
- ALDEN, A. H., W. Chattaway, and W. Thomson. Adam's method for milk analysis (abst.), - - - 9, 13

- ALLEN, E. W., and B. Tollens. Xylose and wood gum from straw, etc. (abst.), - - - - - 12, 158
- ALLIHN, F. Rise of freezing-point in thermometers (abst.), - - - - - 12, 413
- ALSOPI, W. K., and J. H. Vocum. Composition of the ashes of some raw tanning materials, - - - - - 20, 338
- AMTHOR, C. Identification of caramel (abst.), 7, 62: Analyses of Alsace-Lorraine wines of 1885 (abst.), 9, 219: See also Musculus, F.
- ANDERSON, J. T. Identification of arsenic and antimony, - - - - - 13, 210
- ANDRÉ, G. Magnesium oxychlorides, 4, 230: Heat of formation of some oxychlorides and oxybromides of mercury (abst.), 6, 127: New oxychloride of zinc (abst.), 4, 239: See also Berthelot, M.
- ANDREAE, G. L. Temperature regulator (abst.), 1, 91: Solubility of salts in water at different temperatures (abst.), - - - - - 7, 27
- ANDREWS, G. F. Notes on aluminum, - - - - - 16, 485
- ANDREWS, L. Analysis of alloys of lead, tin, antimony, and arsenic, 17, 869: Reduction of sulphuric acid by copper as a function of temperature, - - - - - 18, 251
- ANDREWS, L. W. Ethylene iodopicate (abst.), - - - - - 2, 224
- ANDREWS, W. H. See Campbell, E. D.
- ANDREWS, W. W. Self-regulating gas generator, 17, 304: Extensions of the plaster of Paris method in blowpipe analysis, - - - - - 18, 849
- ANGELBIS, A., and Anschütz, R. Synthesis of dimethylantracene hydride and diphenylethane (abst.), 6, 165: Action of aluminum chloride on vinyl bromide or tribromide in benzene (abst.), - - - - - 6, 166
- ANSCHÜTZ, R. Remarks on the paper of Angelbis and Anschütz on the action of aluminum chloride on vinyl bromide, etc. (abst.), 6, 166: Remarks on chrysaniline (abst.), 7, 83: Acridine picrate (abst.), - - - - - 7, 84
- ANSCHÜTZ, R., and C. Bennert. Action of acetyl chloride and glacial acetic acid on fumaric acid (abst.), - - - - - 5, 18
- ANSCHÜTZ, R., and F. Eltzbacher. Synthesis of anthracene (abst.), 5, 132
- ANSCHÜTZ, R., and C. Romig. Nitration products of diphenylethane (abst.), - - - - - 8, 54
- ANSCHÜTZ, R., and G. Schultz. Phenanthrenequinone (abst.), - - - - - 2, 48
- ANSCHÜTZ, R. See also Angelbis, A.
- ARCHBOLD, G. Preparation of paper pulp (abst.), 5, 122: Albuminoids of maize, - - - - - 14, 313
- ARCHBUTT, L. Analysis of grease (abst.), - - - - - 10, 115
- ARMSTRONG, H. E. Law of substitution in the naphthalene series (abst.), 4, 206: Note on the formation and constitution of fulminates (abst.), - - - - - 6, 46
- ARNAUD, A. Investigations on the composition and nature of carotin (abst.), - - - - - 8, 204
- ARNOLD, C. Estimation of nitrogen in nitrates and nitro-compounds (abst.), 7, 91: Estimation of nitrogen (abst.), - - - - - 8, 25
- ARNOLD, J. O. Allen's method for the detection of hop substitutes in beer (abst.), - - - - - 9, 220

- ARNOLD, J. O., and H. J. Hardy. Estimation of chromium in iron and steel (abst.), 10, 66: Two methods for estimating sulphur in steel (abst.), - - - - - 10, 84
- ARONHEIM, B. Action of nitrous acid on resorcinol ether (abst.), 1, 161; Schützenberger's acetates of chlorine and iodine (abst.), 1, 161
- ARRHENIUS, S. On the validity of the Clausius-Williamson hypothesis, etc. (abst.), - - - - - 6, 73
- ARSONVAL, A. D'. Determination of glucose in blood (abst.), - - - - - 1, 351
- ARTH, G. Oxidation of menthol by potassium permanganate (abst.), 6, 164: New reaction of ethyl carbonate (abst.), 6, 171: Two properties of urethanes of the aliphatic series (abst.), - - - - - 8, 166
- ASBOTH, A. VON. Determination of starch (abst.), - - - - - 9, 46
- ASCHAN, O. Action of mustard oils on amido acids (abst.), - - - - - 7, 85
- ATKINSON, ELIZABETH A. Metal separations by means of hydrobromic acid gas, 20, 797: Indium in tungsten minerals, - - - - - 20, 811
- ATKINSON, ELIZABETH A., and E. F. Smith. Separation of iron from beryllium, - - - - - 17, 688
- ATKINSON, R. W. Determination of phosphoric acid (abst.), 1, 538: Some compounds of antimony and bismuth containing two halogens (abst.), 5, 113: Notes on the volumetric estimation of iron (abst.), - - - - - 6, 242
- ATKINSON, R. W., and H. Yoshida. Peppermint camphor (menthol) and some of its derivatives (abst.), - - - - - 4, 144
- ATTWOOD, G. Blowpipe assay of mercury ores (abst.), - - - - - 1, 370
- ATWATER, W. O., and G. Warnecke. Determination of fats, P. 2, 84
- AUBERT. See Lepine, R.
- AUBRY. Detection of salicylic acid in beer (abst.), - - - - - 1, 578
- AUCHY, G. Volumetric estimation of manganese, 17, 943: Precipitation of phosphomolybdate in steel analysis, 18, 170: Drown's method of determining sulphur in pig iron, 18, 406: Sources of error in determining manganese in steel, 18, 498: Determination of phosphorus in steel and cast iron, 18, 955: Method for complete analysis of iron ores, with notes on Särnström's method of determining manganese, 19, 139: Moist combustion method of determining carbon in steel, 20, 243: Error in carbon determinations made with weighed potash bulbs, 20, 528: On Drown's method of determining silicon in steel, - - - - - 20, 547
- AUDOYNAUD, A. Test for olive oil (abst.), 7, 250: Adulteration of olive oil (abst.), - - - - - 8, 40
- AUGER, V. Action of oenanthaldehyde and oenanthyl chloride on dimethylaniline in the presence of zinc chloride (abst.), - - - - - 9, 7
- AUSTEN, P. T. A new specimen bottle, - - - - - 18, 412
- AUSTEN, P. T., and W. H. Broadhurst. Absorbent blocks, - - - - - 17, 472
- AUSTEN, P. T., and W. A. Horton. Convenient form of universal hand-clamp, - - - - - 17, 611
- AUSTEN, P. T., and F. A. Wilber. Determination of titanium in iron ores, 4, 165; Clarification of water by alum (abst.), - - - - - 7, 200

- AUSTIN, A. Diamylbenzene (abst.), - - - - - 1, 486
- AUTENRIETH, W. Mixed acid anhydrides (abst.), - - - - - 10, 13
- AUWERS, K., and V. Meyer. Tetramethylsuccinic and trimethylglutaric acids (abst.), - - - - - 12, 157
- AUWERS, K. See also Meyer, V.
- AVERY, S., and B. Dales. Electrolytic determination of cadmium, 19, 379: Electrolytic determination of cadmium (note), - 19, 513
- AVERY, S. See Nicholson, H. H.
- AYRTON, M. Improvements in bleaching or purifying oils and grease (abst.), - - - - - 8, 43
- BABCOCK, S. C. See Campbell, E. D.
- BACHMAN, I. A. Improved methods of water analysis, 17, 296; Chemical brick for Glover towers, - - - - - 17, 360
- BÄCKSTRÖM, H., and G. Paykull. Volume and quantity of carbon in the gases evolved by solution of iron in acids (abst.), - - 10, 25
- BAEKELAND, L. Use of fluorides in the manufacture of alcohol, 14, 212
- BAER, S. H., and A. B. Prescott. Dipyrindine methylene iodide, etc., 18, 988
- BAER, S. H. See Prescott, A. B.
- BAEYER, A. Reaction for isatin (abst.), 1, 543: Compounds of the indigo group (abst.), 4, 175; - - - - - 5, 21
- BAEYER, A., and V. Drewsen. Preparation of indigo-blue from *o*-nitrobenzaldehyde (abst.), - - - - - 5, 63
- BAEYER, A., and O. R. Jackson. Synthesis of homologues of hydrocarbostyryl and quinoline (abst.), 2, 170: Synthesis of methylketole, an isomer of skatole (abst.), - - - - - 2, 174
- BAEYER, A., and L. Landsberg. Syntheses by means of phenylacetylene and its derivatives (abst.), - - - - - 4, 176, 206
- BAEYER, A., and C. Pape. Derivatives of *o*-xylene (abst.), - 7, 115
- BAEYER, A., and W. H. Perkin, Jr. On benzoylacetic acid (abst.), 6, 84; On the derivatives of hydrindonaphthene (abst.), 6, 87, 160: Syntheses of naphthalene derivatives (abst.), - - - 7, 115
- BAIRD, J. W. Dictionary of the action of heat upon metallic salts, with references to the literature, - - - - - 5, 135
- BAIRD, W. H. See Stone, W. E.
- BAITHER, O. Tetramethyldiamidothiobenzophenone (abst.), - 10, 40
- BALBIANO, L. Amides and anilides of  $\beta$ -oxybutyric acid (abst.), 2, 367; Synthesis of pyrazole (abst.), - - - - - 12, 233
- BALLAND. Palm wine from Algeria (abst.), 1, 402; Presence of alkaloids in old flours (abst.), - - - - - 8, 167
- BALLING, C. M. Determination of silver in galena by Volhard's method (abst.), - - - - - 1, 562
- BALLO, M. Action of dehydrating bodies on camphoric acid and its amides (abst.), 1, 397; 2, 187: On carbonic acid hydrate (abst.), 5, 64; Remarks on the chemistry of plants (abst.), - - 6, 93
- BALLY, O. Phenylated piperidine and pyridine-bases (abst.), - 9, 196
- BALSOHN, M. Action of ethylene on benzene in presence of alu-

- minum chloride (abst.), 1, 390 : Synthesis of ethylbenzene by means of ether and benzene (abst.), 2, 92 : See also Friedel, C.
- BAMBERGER, E. Color reaction for *o*-diketones (abst.), 8, 58 ; Note on camphoric acid (abst.), 12, 161 : Decomposition of alicyclic 1 : 5-tetrahydronaphthylenediamine into optically active components (abst.), - - - - - 12, 164
- BAMBERGER, E., and S. C. Hooker. Retene (abst.), - - - - - 7, 227
- BAMBERGER, E., and W. Lodter. Action of carbon disulphide on menthol and borneol (abst.), - - - - - 12, 161
- BANNOW, A. Pure butyric acid (abst.), - - - - - 9, 6
- BARBIER, P. Action of acetic anhydride on some aldehyde-phenols (abst.), - - - - - 2, 130
- BARBIER, P., and L. Roux. Action of heat on acetones (abst.), - - - - - 8, 200
- BARBIER, P., and L. Vignon. Researches on phenosafranine (abst.), 9, 170 : Preparation of safranines (abst.), 10, 22 : Preparation of substituted safranines (abst.), - - - - - 10, 22
- BARDY, C., and L. Bordet. Preparation of methyl formate and pure methyl alcohol (abst.), 1, 389 ; Determination of methyl alcohol in commercial wood spirit (abst.), - - - - - 1, 486, 579
- BARKER, G. F. The borderland between physics and chemistry (presidential address), - - - - - 13, 11
- BARR, K. L. See Wills, E. J.
- BARTH, L. VON, and J. Schreder. Diphenols (abst.), - - - - - 1, 293
- BARTH, M. See Nessler, J.
- BARTLEY, E. H. A rapid method of estimating urea in urine, 12, 283 : Rapid estimation of uric acid in urine, - - - - - 19, 649
- BARTOLI, A., and G. Papasogli. Synthesis of organic compounds by electrolysis, etc., (abst.), - - - - - 4, 239
- BARTON, G. E. Examination of glycerol for use in the nitroglycerol manufacture, 17, 277 ; Arsenic in glycerol, 17, 883 ; Manufacture of dynamite, 19, 500 ; Volumetric apparatus, - - - - - 20, 731
- BASKERVILLE, C. Separation of titanium from iron, 16, 427 : Separation of zirconium by means of sulphurous acid, 16, 475 : Reactions between copper and concentrated sulphuric acid, 17, 904 : Reduction of concentrated sulphuric acid by copper, - - - - - 18, 942
- BASKERVILLE, C., and F. W. Miller. Reactions between mercury and concentrated sulphuric acid, 19, 873 ; Decomposition of concentrated sulphuric acid by mercury at ordinary temperatures, 20, 515
- BASKERVILLE, C. See Venable, F. P.
- BASSETT, L. L. See Fleck, H.
- BATTERSHALL, S. P. Note on fibrous sodic chloride, - - - - - P. 2, 141
- BAUBIGNY, H. Existence and formation of nickel protosquioxide (abst.), 1, 295 : Action of insoluble sulphides on nickel sulphate, etc. (abst.), 4, 239 : Action of hydrogen sulphide on nickel chloride (abst.), 4, 240 : Preparation of chromium sulphate (abst.), 6, 78 : Equivalent of chromium, determined from the sulphate (abst.), 6, 127 : On the oxidation and determination of chromium (abst.), 6, 136

- BAUDRIMONT, A. Detection of fuchsine in wine (abst.), - 1, 578
- BAUER, A., and K. Hazura. Linoleic acid (abst.), - - - 8, 185
- BAUMANN, E. Aromatic products of the animal body (abst.), - 2, 226
- BAUMANN, E., and F. Tiemann. Potassium hydrindigotinsulphate and indoxylsulphate (abst.), - - - 2, 371
- BAUMERT, G. Action of sodium on lupinine (abst.), 5, 17: Anhydrolupinine (abst.), - - - - 5, 17
- BAUMHAUER, E. H. VON. Thermoregulator, which can be used as a registering thermometer (abst.), - - - - 7, 92
- BAYER, K. J. Method for determining aluminum (abst.), - 7, 296
- BAYLEY, T. Cyclical law of the elements, 20, 927: Atomic volume as a periodic function, - - - - 20, 935
- BAYLEY, W. S. See Morse, H. N.
- BRADLE, C. See Cross, C. F.
- BEAL, W. H. Determination of volatile and insoluble fatty acids in butter-fat, - - - - 16, 673
- BRAM, W. See Leffmann, H.
- BRAMER, M., and F. W. Clarke. New salts of aniline (abst.), 1, 286: Note on lithium picrate (abst.), - - - - 1, 286
- BÉCHAMP, A. Action of hydrogen dioxide on the coloring-matter of the blood and on hematosin (abst.), 4, 240: Decomposition of hydrogen dioxide by fibrin (abst.), - - - 5, 120
- BECHI, G. VON. Succinyl compounds of toluidine (abst.), 1, 160, 397
- BECKER, F. Detection of adulterations in beeswax (abst.), - 1, 578
- BECKER, G. F. Reduction of weighings to vacuum (abst.), - 1, 250
- BECKER, P. See Michaelis, A.
- BECKHURST, H. Reaction of ptomaines (abst.), - - - 4, 193
- BECKMANN, E. *iso*-Nitroso-compounds (abst.), - - - 9, 195
- BECKURTS, H. See Otto, R.
- BEDALL, K., and O. Fischer.  $\alpha$ -Oxyquinoline (abst.), - - - 5, 19
- BEDSON, P. P. Derivatives of phenylacetic acid (abst.), - 2, 348
- BEERS, F. T. See Pond, F. J.
- BEESON, J. L. Estimation of crude fiber in sugar-cane, 16, 308: Apparatus for estimating the water-holding power of soils, 17, 769: Occurrence of the amines in the juice of sugar-cane, 18, 743: Extraction apparatus for food-stuff analysis, 18, 744: A study of the clarification of sugar-cane juice, 19, 56: Improvement in drying chambers, 19, 349: Physical effects of various salts and fertilizer ingredients upon the moisture supply of a soil, 19, 620: Nitric nitrogen produced by the pea, - - - 20, 793
- BETZ, W. VON. Electromotive force of thermoelectric batteries (abst.), - - - - 1, 585
- BÉHAL, A. Caprylidene, an acetylene hydrocarbon (abst.), 9, 6: Preparation of allyl iodide, etc. (abst.), 9, 100: Preparation of *iso*-propylacetylene (abst.), 10, 81: Hydration of tolane (abst.), 10, 83: Alcoholic silver nitrate as a reagent for acetylene hydrocarbons (abst.), - - - - 10, 87

- BEHR, A. Occurrence of aconitic acid in cane-juice and raw sugar,  
P. 1, 220 : Crystallized anhydrous grape sugar, - - - 4, 11
- BEHREND, P. Action of sulphuryl chloride on alcohols (abst.), - - - 2, 136
- BEILBY, G. Specific gravity of paraffin, solid, fused, and in solution  
(abst.), - - - - - 5, 236
- BEILSTEIN, F. Separation of nickel from zinc (abst.), 1, 332 : Dinitro-  
tropanatoluidine (abst.), - - - - - 2, 224
- BEILSTEIN, F., and L. Jawein. Determination of zinc by electrolysis  
(abst.), 1, 330 : Electrolytic determination of cadmium (abst.),  
1, 330 : Separation of manganese from iron (abst.), - - - 1, 533
- BEILSTEIN, F., and A. Kurbatow. Chloranilines and chlornitranilines  
(abst.), 2, 57 ; Behavior of some nitro compounds towards hydro-  
gen sulphide (abst.), 2, 178 ; Dinitronaphthalene (abst.), 2, 369 ;  
Dinitrobenzoic acid (abst.), - - - - - 2, 369
- BEIN, S. Coloring-matter in yolk of eggs (abst.), 12, 165 : Quantita-  
tive determination of egg substance (abst.), - - - - 12, 176
- BEKETOFF, N. N. Relations dependent on atomic weight (abst.), - - - 6, 128
- BELDEN, A. W. See Venable, F. P.
- BELL, J. C. Analysis of flour and bread (abst.), 1, 566 : Analyses of  
tea (abst.), - - - - - 4, 189
- BELLENOT, G. See Perkin, W. H., Jr.
- BENCKISER, T. See Nietzsche, R.
- BENEDICT, C. H. See Dennis, L. M.
- BENEDICT, F. G., and R. S. Norris. Determination of small quanti-  
ties of alcohol, - - - - - 20, 293
- BENEDIKT, R., and M. Cantor. Determination of glycerol (abst.), 10, 196
- BENEDIKT, R. See Weselsky, P.
- BENKER. See Lasne.
- BENKERT, A. L., and E. F. Smith. Separation of bismuth from  
lead, - - - - - 18, 1055
- BENNETT, A. A., and E. E. Pammel. Study of some gas-producing  
bacteria, - - - - - 18, 157
- BENNETT, A. A., and L. A. Placeway. Determination of chlorine,  
bromine, and iodine, in mixtures, - - - - - 18, 688
- BENNERT, C. See Anschütz, R.
- BENTLEY, W. B. See Menke, A. E.
- BERAN, A. *p*-Amidoocetylbenzene, *p*-amidocaprylbenzene, and an  
amidoocetyltoleue (abst.), - - - - - 7, 176
- BERG, P. VON. Separation of zinc from iron, cobalt, and nickel  
(abst.), 9, 9 : Determination of the sulphides of zinc and cad-  
mium (abst.), - - - - - 9, 35
- BERGHE, J. VAN DER. Copper normally present in wheat (abst.), - - - 4, 188
- BERGLUND, E. Method for separating tin, antimony, and arsenic  
(abst.), 6, 98 : Quantitative separation of chlorine and bromine  
(abst.), - - - - - 7, 178
- BERING, H. Determinations of solids in milk (abst.), - - - - 1, 357
- BERNHARDT, W. On condensations, - - - - - 13, 122

- BERNTSEN, A. Amidines and thiamides of monobasic organic acids (abst.), - - - - - 2, 188
- BERNTSEN, A., and G. Friese. Normal dithiourethanes (abst.). - 4, 268
- BERNTSEN, A., and W. Hess. Ammonium bases derived from quinoline (abst.), - - - - - 7, 119
- BERT, P., and P. Regnard. Action of hydrogen dioxide in organic matter and on fermentation (abst.), - - - - - 4, 239
- BERTHELOT, M. Researches on ozone and electricity (abst.), 1, 171 : Formation of ethereal salts of hydracids in the gaseous state (abst.), 1, 172 : Heat disengaged by combining carbon monoxide with other bodies (abst.), 1, 279 : Specific heat and heat of fusion of gallium (abst.), 1, 279 : Reciprocal displacement between weak acids (abst.), 1, 279 : Rotary power of styrolene (abst.), 1, 279 : Relative affinities and reciprocal displacement of oxygen and the halogens (abst.), 1, 280 : Decomposition of hydracids by metals (abst.), 1, 384 : Reciprocal displacements between oxygen, sulphur, and the halogens, when combined with hydrogen (abst.), 1, 385 : Role of auxiliary acids in etherification (abst.), 1, 386 : Direct combination of cyanogen with hydrogen and the metals (abst.), 1, 398 ; 2, 92 : Remarks on memoir of Noble and Abel on the combustion of gunpowder (abst.), 1, 401 : Remarks on communication of A. Wurtz on chloral hydrate (abst.), 1, 402 : Thermochemical data (abst.), 2, 88 : Epichlorhydrin (abst.), 2, 93 : Persulphuric acid ; its formation by electrolysis (abst.), 2, 362 : Heat of formation of persulphuric acid (abst.), 2, 363 : Decomposition of hydrogen peroxide in presence of alkalies, and on derivatives of barium dioxide (abst.), 2, 365 : Chemical stability of matter under the influence of sonorous vibrations (abst.), 2, 433 : Heat of formation of ammonia (abst.), 2, 433 : Heat of formation of oxides of nitrogen (abst.), 2, 433 : Double salts formed by haloid mercury salts (abst.), 4, 208 : Double salts of mercury (abst.), 4, 231, 232 : Decomposition of haloid mercury salts, etc. (abst.), 4, 233, 234 : Haloid salts of silver and potassium (abst.), 4, 235 : Union of free hydrogen with ethylene (abst.), 4, 235 : Transformation of carbon oxysulphide into urea and thiourea (abst.), 4, 236 : Absorption of gases by platinum (abst.), 4, 239 : Electrolysis of hydrogen dioxide (abst.), 4, 240 : Thermochemistry of lead iodide (abst.), 5, 120 : Remarks on thermochemical results (abst.), 6, 34 : Heat of formation of fluorides (abst.), 6, 74 : On Faraday's law (abst.), 6, 156 : Rate of propagation of detonation in solid and liquid explosives (abst.), 7, 93 : On the principle of maximum work (abst.), 7, 138 : Thermochemical data on phenols (abst.), 8, 34 : Fixation of atmospheric nitrogen by argillaceous soils (abst.), 8, 18 : Contributions to a knowledge of sulphur and mercury (abst.), 8, 20 : Researches on antimony sulphide (abst.), 9, 5 : Direct fixation of nitrogen of the air by vegetable soils (abst.), 10, 12 : Researches on drainage (abst.), 10, 12 : Note on



- mellitose (abst.), 12, 71: Fixation of atmospheric nitrogen by plants (abst.), - - - - - 12, 72
- BERTHELOT, M., and (G.) André. On carbonates in living plants (abst.), 8, 21: Determination of oxalic acid in vegetable matter (abst.), 8, 37: Relations between the formation of oxalic acid in plants and of albuminoid matter (abst.), 9, 7: Displacement of ammonia by magnesia (abst.), 9, 99: On the nitrogenous principles of vegetable soil (abst.), 9, 104: Decomposition of amines (abst.), 9, 104: Researches on the emission of ammonia by vegetable soils (abst.), - - - - - 10, 12
- BERTHELOT, M., and C. Fabre. On the different forms of tellurium (abst.), 10, 10: Heat of formation of hydrotelluric acid (abst.), 10, 10
- BERTHELOT, M., and M. Guntz. Absorption of chlorine by carbon, and (on its) combination with hydrogen (abst.), - - - - - 7, 148
- BERTHELOT, M., and L. Ilosvay. Double salts prepared by fusion (abst.), - - - - - 4, 239
- BERTHELOT, M., W. Louguinine, and A. Recoura. Calorimetric measurements (abst.), - - - - - 10, 15
- BERTHELOT, M., and P. Vieille. New method of measuring the heat of combustion of carbon, etc. (abst.), 7, 146: Heat of combustion of solid hydrocarbons and sugars (abst.), - - - - - 9, 112
- BERTHELOT, M., and E. Werner. Heat of neutralization of polyhydric phenols (abst.), 7, 119: Heat of neutralization of hydroxybenzoic acids (abst.), 8, 21: On the hydroxybenzoic acids, and their heat of formation and transformation (abst.), - - - - - 8, 22
- BERTRAND, A. Volumetric determination of active oxygen in barium dioxide and oxygenated water (abst.), 2, 132: Reactions of titanium tetrachloride, stannic chloride, and antimonie chloride on acetic acid and acetic anhydride (abst.), 2, 363: Compound of titanium tetrachloride with acetyl chloride (abst.), 2, 430: Combination of titanium tetrachloride with phosphorus trichloride (abst.) 2, 434: Reduction of ethyl nitrate by alcohol (abst.), 2, 434: Compound of titanium tetrachloride with ethyl oxide (abst.), 2, 434
- BETTEL, W. Estimation of organic nitrogen in waters, beers, etc. (abst.), - - - - - 4, 162
- BETTENDORFF, A. Detection of sodium phosphate in glacial phosphoric acid (abst.), - - - - - 10, 66
- BETZ. Sensitiveness of silver bromide to light (abst.), - - - - - 6, 128
- BEUTELL, A., and F. W. Dafert. A burette without graduations (abst.), 9, 17
- BEVAN, E. J. See Cross, C. F.: See also Green, A. G.
- BEYER, C. A quinoline homologue (abst.), - - - - - 7, 145
- BIDAUX, R. See Guyot, P.
- BIDET, A. Continuous preparation of oxygen (abst.), - - - - - 8, 21
- BICHELE, M. Criterion of purity of spices (abst.), - - - - - 1, 570
- BIGELOW, W. D. Coloring-matter in California red wines, 17, 213:  
Index to literature on the detection and estimation of fusel oil, 18, 397
- BIGELOW, W. D., and C. C. Hamilton. Influence of alum, aluminum

- hydroxide and aluminum phosphate, on the digestibility of bread, 16, 587
- BIGELOW, W. D., and K. P. McElroy. Estimation of sugars in condensed milk, - - - - - 15, 668
- BIGELOW, W. D. See also Wiley, H. W.
- BILLITZ, G., and K. Heumann. Preparation of pyrosulphuryl chloride and chlorosulphonic acid (abst.), - - - - - 5, 126
- BINDER, F. See Fittig, R.
- BINDER, O. Water analysis (abst.), - - - - - 9, 219
- BINZ, C., and H. Schulz. Chemical cause of the poisonous nature of arsenic - - - - - 2, 115
- BIRNBAUM, K., and H. Reinherz. Action of iodine on the silver salts of some aromatic acids (abst.), - - - - - 4, 264
- BISCHLER, A. Condensation products from *p*-toluidine and *p*-nitrobenzaldehyde (abst.), - - - - - 10, 41
- BISCHOF, A. See Liebermann, C.
- BISCHOF, G. Colorimetric determination of traces of lead (abst.), 1, 87
- BISCHOF, O. See Wallach, O.
- BISCHOFF, C. See Weyl, T.
- BISHOP, H. A. Hydrogen sulphide generator, - - - - - 16, 48
- BLADIN, J. A. Action of cyanogen on the toluidines (abst.), 6, 38 :  
On cyanogen compounds of the aromatic *o*-diamines (abst.), - 7, 245
- BLAIR, A. A. Determination of carbon in steel, 18, 223 : Determination of sulphur in pig iron, - - - - - 19, 114
- BLAIR, A. A., and J. E. Whitfield. Ammonium phosphomolybdate and the reducing action of zinc, - - - - - 17, 747
- BLANK, A. See L. Knorr.
- BLAREZ, C. Acidimetric determination of sulphurous acid, etc. (abst.), - - - - - 8, 180
- BJAS, C. Detection of salicylic acid in beer (abst.), - - - 1, 294
- BLASDALE, W. C. Properties of some California oils, - - - 17, 935
- BLEUNARD, A. Action of trimethylamine on carbon disulphide (abst.), - - - - - 1, 294
- BLEUNARD, A., and G. Vrau. Action of iodine on naphthalene at a high temperature (abst.), - - - - - 4, 232
- BLINKS, W. M. See Noyes, W. A.
- BLOCHMANN, R. Concentration of reagents (abst.), - - - 12, 175
- BLOMÉN, J. E. Some practical points in the manufacture of nitroglycerol, 17, 263 : Manufacture of soluble nitrocellulose for nitrogelatin and plastic dynamites, 17, 411 : See also Krug, W. H.
- BLONDONNEAU, L. Determination of water in starch (abst.), 6, 137
- BLOXAM, C. L. Identification of minute quantities of silver cyanide (abst.), 5, 245 : Estimation of manganese in cast iron and spiegel (abst.), - - - - - 6, 242
- BLOXAM, W. P. See Thomson, J. M.
- BLUM, L. Direct separation of manganese from iron (abst.), 9, 10 : Determination of aluminum in the presence of iron and phosphoric acid (abst.), 10, 66 : Determination of sulphur in coke

# INDEX OF AUTHORS.

II

- (abst.), 10, 155 : Adulteration of Thomas slag (abst.), - 12, 413
- BLVTH, A. W. Detection of alum in bread (abst.), - 4, 188
- BOCKAIRY, P. Detections of falsification in butter (abst.), - 10, 87
- BOCKLISCH, O. Ptomaines from putrefying fish (abst.), - 7, 175
- BODEWIG, C. Estimation of boric acid in borosilicates (abst.), 6, 239:  
See also La Coste, W.
- BODLÄNDER, G., and J. Traube. Limits of fusel oil in spirituous liquors (abst.), - 9, 17
- BODMER, R. See Stokes, A. W.
- BOECK, G. de. See Spring W.
- BÖCKMANN, E. To cut glass tubing, etc. (abst.), - 9, 10
- BÖCKMANN, F. Determination of sulphur in pyrites (abst.), - 4, 161
- BÖHMER, C. Absorbents for nitric oxide (abst.), - 4, 160
- BÖHRINGER, C. See Forst, C.
- BÖRNSTEIN, E. Oxidation of glycerol in an alkaline solution, and preparation of pure glyceric acid (abst.), - 8, 64
- BÖTTINGER, C. Contribution to history of glyoxylic acid (abst.), 1, 395 : Contribution to knowledge of pyrroacemic acid (abst.), 2, 53 : Pyridine derivatives (abst.), 6, 83 : Pyridine compounds obtained by condensation (abst.), 6, 83 : Behavior of pyrotartaric acid with bromine (abst.), - 6, 308
- BOGERT, M. T. Preparation of heptyl thiocyanate, 18, (75) : Charles Edwards Colby (obituary) - 20, 139
- BOGGS, T. R. See Herty, C. H.
- BOHLIG, E. Modes of combination of elements indicated in water analysis (abst.), 1, 336 : New method of determining chlorine volumetrically (abst.), - 7, 209
- BOISBAUDRAN, Lecoq de. See Lecoq de Boisbaudran, P. E.
- BOISSIEU, P. de. On the water of crystallization of alums (abst.), 9, 100 : Preparation of tetraphenylethylene (abst.), 10, 81 : Methyl-iodoform (abst.), - 10, 114
- BOKORNY, T. See Loew, O.
- BOLLERT, A. See Liebermann, C.
- BOLTON, H. C. Exhibition of alchemical medals, 13, 30 : Experimental chemistry in the eighteenth century (title of a lecture), 13, 262 : International index to chemical literature, 15, 574 : Early American chemical societies, 19, 717 : Two British patents—"Getting Gold from Wheat," and "Divining the Presence of Precious Metals," - 19, (23)
- BONDZYSKI, S., and H. Rufi. Butter fat (abst.), - 12, 118
- BONG, G. Decomposition of silicates by fusion with litharge (abst.), 1, 334
- BOOT, J. C. A new form of pyknometer, - 19, 61
- BOOTH, J. C. A general method of toughening gold in the melting crucible, 6, 182, 210 : Manufacture of graphite crucibles, 6, 283 ; 7, 4 : Smelting furnace of the United States mint, - 7, 159
- BORDEN, J. L. See Wood, J.
- BORDET, L. See Bardy, C.

- BORGSMANN, E. Determination of glycerol in sweet wines (abst.), 4, 191 : Examination of spices (abst.), 10, 70 : See also Fresenius, R.
- BORICKY, E. Microchemical analysis of minerals and rocks (abst.), 1, 95
- BORNTRÄGER, A. Determination of potassium acid tartrate in lees, etc. (abst.), 9, 120 : Criticism of the direct methods for determining tartaric acid in lees, argols, etc. (abst.), 10, 23 : Examination of alcohol (abst.), 12, 118, 119 : Reactions of resorcinol and thymol (abst.), - - - - - 12, 502
- BOSSHARD, E. Determination of nitrogen by the Kjeldahl method (abst.), - - - - - 7, 179
- BOTHAMLEY, C. H., and G. R. Thompson. Estimation of chlorates by the zinc-copper couple (abst.), - - - - - 10, 26
- BOTT, W. The three isomeric pyrocresols (abst.), - - - - - 9, 195
- BOTTOMLEY, J. Source of error in colorimetry (abst.), - - - - - 1, 379
- BOUCHARDAT, G., and J. Lafont. On lemon oil (abst.), 7, 247 : Action of acetic acid on French oil of turpentine (abst.), 8, 71 : Transformation of oil of turpentine into optically active terpinene (abst.), 8, 72 : New synthesis of an inactive borneol (abst.), 8, 73 : Synthesis of an inactive terpinenol (abst.), 8, 183 : Active camphenol and ethylborneol (abst.), 9, 114 : Transformation of terpinenol into a menthenol (abst.), - - - - - 10, 191
- BOUILHON, E. Detection of fuchsine in wine (abst.), - - - - - 1, 575
- BOURCART, R. Action of ammonia upon anthraquinonesulphonic acid (abst.), 2, 365 : Printing of natural indigo on calico (abst.), 6, 104 : The dyeing properties of anthragallol (abst.), - - - - - 6, 142
- BOURGEOIS, L. Manufacture of crystallized barium chromate (abst.), 1, 279 : On crystallized barium and strontium titanates (abst.), 8, 178 : Methods for preparation of crystallized carbonates (abst.), 9, 33 : Preparation of crystallized neutral lead chromate (abst.), 9, 110 : Reproduction of celestine and anglesite by the wet process (abst.), 10, 113 : See also Spring, W., and Verneuil, A.
- BOURGOIN, E. Curve of solubility of salicylic and benzoic acids (abst.), 1, 272 : Bromcitraconic acid (abst.), 1, 280 : Elimination of bromine from bromcitraconic acid, and on a new organic acid (abst.), 2, 88 : Solubility of benzoic and salicylic acids (abst.), 2, 88 : Electrolysis of malonic acid (abst.), 2, 431 : Preparation of malonic acid (abst.), 2, 435 : Action of potassium cyanide on potassium trichloracetate (abst.), - - - - - 4, 231
- BOURGOUGNON, A. Pennsylvania petroleum, P. 1, 91 : Determination of naphtha in crude petroleum, P. 1, 119 : Areometers, P. 1, 2, 40, 48 : Petroleum and its examination, 1, 188 : Analyses of calculi, etc., 4, 215 : Michel Eugène Chevreul (eulogy), 11, 71 : On the reaction of hydrogen peroxide with potassium permanganate in the presence of sulphuric acid, 11, 94 : The commercial manufacture of hydrogen dioxide and its applications, 12, 64 : On condensed milk, 13, 160 : Early mention of areometers, 13, 252 : Application of graphic methods in certain chemical studies, - - - - - 14, 128

- BOURGOUGNON, A., and J. A. Mandel. Ohio petroleum, - - 13, 168
- BOUTY, E. Electrical conductivity of dilute salt solutions (abst.), 6, 125
- BOVET, V. Antiseptic qualities of pyrogallol (abst.), - - 1, 497
- BOWEN, H. C. The penetration machine; an explanation, - 17, 218
- BOWER, H. Chemical Industry of the United States, - - 15, 563
- BOWMAN, J. W. See Mason, W. P.
- BOYER, C. S. Accuracy of the dyeing test, 17, 468: Interpretation of results in analysis of extracts of fustic, - - - 17, 518
- BRADBURY, R. H. Reaction between molybdic acid and potassium chromate, - - - - - 16, 565
- BRAND, A. Use of bromine for decomposing sulphides (abst.), 9, 35: Use of double pyrophosphates in electrolytic separations (abst.), 12, 168
- BRASS, W. See Wallach, O.
- BRAUNER, B. On didymium (abst.), 4, 240: Contributions to chemistry of the cerite metals (abst.), 4, 169, 176; 5, 113: Atomic weight of tellurium (abst.), - - - - 6, 129
- BRAUNER, B., and F. Tomicek. Action of hydrogen sulphide on arsenic acid (abst.), - - - - - 10, 11
- BREGOWSKY, I. M. See Ford, A. P.
- BREMER, G. J. W. Splitting up of inactive malic acid (abst.), 2, 369
- BRENNEMAN, A. A. Review of industrial chemistry, 4, 72: New device for the determination of carbon in cast iron, 5, 56: Apparatus for rapid gas analysis, 5, 76: Tubes of colored glass for Nesslerizing, 6, 121: Analysis of a mineral water, 6, 123: Contributions to the study of the New York water supply, 8, 3: Examination of Croton water, 8, 157: Necessity of standard conditions in the application of Wanklyn's method of water analysis, 8, 221: Note on a sample of old butter, 9, 3: On the fixation of atmospheric nitrogen, 11, 2, 31: On the alleged sterilization of river water by mine water, 12, 12: Lecture experiments, 12, 48: Editorial, 12, 4: Notes on water analysis by the ammonia method, with some new apparatus, 12, 457: Improved burette holder, 14, 15: A remarkable water for public use, - - - - 14, 34
- BROADHURST, W. H. See Austen, P. T.
- BROESICKE, G. Staining microscopic preparations (abst.), - 1, 584
- BRONNER, G. Cupellation as a lecture experiment (abst.), - 1, 90
- BROECKMANN, K., and K. Polstorff. Action of potassium permanganate on morphine (abst.), 2, 98: Action of air on morphine in ammoniacal solution (abst.), 2, 98: Methylmorphine hydroxide, 2, 98: Schützenberger's oxymorphine (abst.), - - - 2, 98
- BROWN, F. D. Value of different method of fractional distillation (abst.) - - - - - 2, 345
- BROWN, W. L. New form of gas assay furnace (abst.), - 6, 244
- BRÜGELMANN, G. Conversion of thiosulphates into sulphates by means of permanganate (abst.), - - - - 6, 96
- BRÜHL, J. W. Limits of application of methods of vapor density estimation in barometric vacuum (abst.), 1, 292: Limits to employment of method of determining vapor-densities in barometric

- vacuum (abst.), 1, 380 : New process for purification of mercury, 1, 292, 377, 378 : Preparation of divaleryl (abst.), 1, 397 : Relations between physical properties and chemical constitution, etc., 2, 118
- BRÜHL, J. W., and V. Zenger. See Wiedemann, G. H.
- BRUGNATELLI, T. Rapid evaporation of liquids (abst.), - 1, 90
- BRUHNS, G. Adenine and hypoxanthine (abst.), - - 12, 161
- BRUNCK, H., and C. Graebe. Soluble alizarin blue (abst.), - 5, 51
- BRUNEAU, B. See Rousseau, G.
- BRUNNER, H. Preparation of coloring-matters by action of aromatic nitrosubstitution products on phenols, etc. (abst.), - - 4, 205
- BRUNNER, H., and E. Chuard.  $\beta$ -Amidoalizarin (abst.), - 7, 229
- BRUNNER, H., and W. Robert. On phenol dyestuffs (abst.), - 7, 229
- BRUNTON, T. L. Physiological action of brucine and bromostychnine (abst.), - - - - 7, 116
- BRUSH, C. F. A new gas (etherion), - - - - 20, 899
- BRUSH, G. J., and E. S. Dana. Two new mineral species (abst.), - 1, 392
- BRYANT, A. P. Separating phosphoric acid derived from bone from that derived from rock phosphate, 18, 491 : See also Day, W. C.
- BUCHANAN, J. See Mills, E. J.
- BUCHNER, M. Adulteration of beeswax (abst.), - - 1, 361
- BÜCHNER, E. W. Contributions to the history of ultramarine (abst.), 1, 395
- BUISINE, A. Composition of suint (abst.), 8, 185 : Transformation produced in suint waters (abst.), 8, 203 : Volatile acids of suint (abst.), 9, 173 : See also Duvillier, E.
- BUJARD, A. See Klinger, A.
- BUNGENER, H. Bitter principles of hops (abst.), - - 8, 97
- BUNSEN, R. W. Separation of antimony from arsenic (abst.), - 1, 332
- BURR, H. C. See Smith, E. F.
- BUSH, C. S. Degras, - - - - 16, 535
- BYK, S. Desulphurization of guanidine thiocyanate (abst.), - 2, 134
- BYLERT, A. van. Quantitative determination of antimony by Marsh's test (abst.), - - - - 12, 476
- CADY, H. P., and A. P. Ruediger. Modification of the permanganate method for determination of iron, - - - 19, 575
- CAHOUS, A., and E. Demarçay. Stannobutyl and stannoomyl iodides (abst.), 1, 399 : Decomposition of fatty acids by superheated steam (abst.), 1, 403 : Formation of sebacic and suberic acids from crude fatty acids, etc. (abst.), - - - 4, 233
- CAILLETET, L. Compressibility of gases (abst.), 1, 172 : Ethylene for production of low temperatures (abst.), - - - 4, 238
- CAILLOL DE PONCY, O., and C. Livon. Chronic poisoning by antimony (abst.), - - - - 5, 118
- CAIRNS, F. A. Determination of phosphorus in pig iron by means of molybdic acid, - - - - P. 1, 167
- CALDWELL, G. C. New laboratory stand, 13, 102 : Porcelain Gooch crucible, 13, 105 : New form of voltameter, 13, 207 : The more notable events in the progress in agricultural chemistry since

- 1870, 14, 83: The American chemist (Presidential address), 14, 331
- CALDWELL, G. C., and S. W. Parr. De Fecamp's method for determination of fat in milk (abst.), - - - 8, 61
- CALM, A. Transformation of  $\alpha$ - and  $\beta$ -naphthol into amido-naphthalenes (abst.), - - - 4, 270
- CAMERON, C. A. Determination of lead as iodate (abst.), - 1, 535
- CAMERON, F. K. The benzoyl ester of acethydroxamic acid, 20, (72)
- CAMERON, F. K., and H. A. Holly. Acetone-chloroform, - 20, (71)
- CAMERON, F. K., and E. F. Thayer. Boiling-point curve for benzene-alcohol solutions, - - - 20, (72)
- CAMPBELL, A. See Gomberg, M.
- CAMPBELL, E. D. Determination of nickel in nickel steel, 16, 96:  
Allowable differences and probable limits of accuracy in analyses, etc., 18, 35: Thermochemical study of iron and steel; a correction, - - - 20, 78
- CAMPBELL, E. D., and W. H. Andrews. Determination of nickel in nickel-steel, - - - 17, 125
- CAMPBELL, E. D., and S. C. Babcock. Further study on the solubility of phosphorus in steel, - - - 19, 786
- CAMPBELL, E. D., and E. C. Champion. Electrolytic determination of tin in tin ores, - - - 20, 687
- CAMPBELL, E. D., and W. E. Hartman. Influence of silicon upon the heat of solution of cast irons, - - - 20, 690
- CAMPBELL, E. D., and F. Thompson. Preliminary thermochemical study of iron and steel, - - - 19, 754
- CAMPBELL, H. D. See also Howe, J. L.
- CAMPBELL, G. F. See Osborne, T. B.
- CANTOR, M. See Benedikt, R.
- CAPPELL, E. Spectrum of calcium (abst.), - - - 1, 583
- CARETTE, H. Oxidation of sebacic acid (abst.), 8, 28, 56, 87: Oxidation of fatty acids (abst.), - - - 8, 184
- CARNELLEY, T. Action of heat on mercuric chloride (abst.), 4, 225
- CARNELLEY, T., and W. Frew. Corrosion of leaden water pipes (abst.), - - - 9, 221
- CARNELLEY, T., and J. Walker. Dehydration of metallic hydroxides by heat (abst.), - - - 9, 189
- CARNOT, A. Volumetric determination of potassium (abst.), 1, 333:  
Use of hydrogen sulphide in the dry way (abst.), 1, 489, 536:  
Determination of chromium (abst.), 4, 166: Successive separation of copper, cadmium, and zinc, from nickel and cobalt, etc. (abst.), 8, 277: Separation of antimony and tin (abst.), 9, 11:  
Separation of arsenic, antimony, and tin (abst.), 9, 11: Use of hydrogen dioxide for the determination of metals of the iron group (abst.), 10, 192: Separation of lithium as fluoride (abst.), 10, 193
- CARO, H. See Graebe, C.
- CARPENTER, W. L. On the solidification of fatty oils (abst.), 6, 198
- CARR, O. The predominant organic acid in sorghum juice, 15, 144:

- Modification of Knorr's extraction apparatus, - - - 16, 868
- CASALI, A. Reaction for glycocholic acid; detection of gall in urine (abst.), - - - - - 1, 105
- CASAMAJOR, P. Amalgamation of iron and of other metals, P. 1, 49: Estimation of potassium as acid tartrate, P. 1, 98; A new portable burette, P. 1, 159; A new mounted burette, P. 1, 181: Corrections due to variations of temperature, P. 1, 188: Areometers, P. 1, 2, 8, 19: Connection between electricity and the motions of camphor on water, P. 1, 2, 66: Contributions to blowpipe chemistry, P. 2, 29, 78, 103; Verification of graduated glass vessels and areometers from 4° to 45°, P. 2, 128: Influence of temperature on polarization of inverted sugar, 1, 26: Report on Berzelius medal, 1, 132: Rapid estimation of pure sugar, 1, 205: Action of bone-black on solutions of pure sugar, 1, 468; Detection of starch sugar mechanically mixed with cane-sugar, 2, 111, 428: Note on sulphuretted hydrogen, 3, 30: Detection of oleomargarine, 3, 83: Detection of starch-sugar syrup mixed with sugar-house molasses, 3, 87: Table for correction of saccharimetric tests by inversion, 3, 89: New filtering apparatus, 3, 125: Analysis of beet root and sorghum cane, 3, 151: Volumetric estimation of copper and of lead, 4, 35: Note on asbestos filters, 4, 248: Detection of anhydrous glucose mixed with refined cane-sugar, 5, 41: Note on camphor motions, 7, 13: Singular process of sugar analysis, 7, 42: Two new filters and a new aspirator, 7, 104: Silver iodide as a blowpipe reagent, 7, 132: Platinum filtering bulb for Carmichael's system of filtration, - - - - - 8, 17
- CATHÉLAZ, J. Fraud in tartar emetics (abst.), - - - - - 6, 37
- CATLIN, C. A. Improved apparatus for volumetric determination of carbon dioxide and other gases, - - - - - 15, 614
- CAUSSE, H. Action of ethyl aldehyde on resorcinol (abst.), - - - 9, 34
- CAVENTOU, E., and C. Girard. Action of sulphuric acid on cinchonine in the presence of oxalic acid (abst.), - - - - - 10, 83
- CAZENEUVE, P. Determination of glucose in blood (abst.), 1, 350: Oxidation of formic and oxalic acids, etc. (abst.), 1, 490: Camphor dichloride (abst.), 4, 233: Formation of acetylene at the expense of iodoform (abst.), 6, 37: Isomerism of chloronitrated camphor (abst.), 6, 131: Detection and determination of fuchsine in wines (abst.), 7, 294: Examination of wines for fuchsine, etc. (abst.), 8, 57: Detection of orange and yellow colors in wines (abst.), 8, 80: Detection of artificial red coloring-matter in wines (abst.), 8, 81: Camphonitrophenol, isomeric with nitro-camphor (abst.), - - - - - 12, 71
- CHAMOT, E. M. See Dennis, L. M.
- CHAMPION, E. C. See Campbell, E. D.
- CHANCE, A. M. Recovery of sulphur from alkali waste (abst.), 10, 90
- CHANCEL, G. Systematic course for detection of coloring-matters



- in wines (abst.), 1, 576: Nitro-acids derived from ketones (abst.), - - - - - 4, 208
- CHANDLER, C. F., and E. Waller. Analysis of mineral waters from Texas, - - - - - 11, 141
- CHAPER, M. Presence of diamonds in a pegmatite from Hindustan (abst.), - - - - - 6, 105
- CHAPIN, E. S. See Noyes, A. A.
- CHAPMAN, E. J. Turner's reaction for boric acid (abst.), - 1, 528
- CHAPOTEAUT, P. On the gastric juice (abst.), - - - 4, 242
- CHAPPUIS, J. See Hautefeuille, P., and Vincent, C.
- CHASTAING, P. Complex function of morphine; transformation into picric acid; solubility (abst.), 4, 76: Researches on pilocarpine (abst.), 4, 78: Action of acids on pilocarpine (abst.), 4, 236
- CHATARD, T. M. Estimation of alkalies in silicates (abst.), 6, 312
- CHATTAWAY, W. See Allen, A. H.
- CHAUTARD, P. Detection of acetone in liquids, etc. (abst.), 8, 24: See also Clermont, P. de.
- CHAUVEAU, A. Preparation of attenuated cultivations of anthrax virus (abst.), 6, 78: Heating of cultivations of *Bacillus anthracis* (abst.), - - - - - 6, 130
- CHESNUT, V. K. Oil-like skin irritant from poison ivy, 18, (81): Poisonous honey, - - - - - 19, (10)
- CHESTAKOFF, W. Substitution product of diallylcarbinol (abst.), 6, 136
- CHRISTENSEN, O. T. The chromium and manganese compounds corresponding to potassium ferro- and ferricyanide (abst.), 7, 140
- CHRISTOMANOS, A. C. Specific gravity of iodine trichloride (abst.), 1, 90: New apparatus for determination of melting-point (abst.), - - - - - 12, 226
- CHUARD, E. See Brunner, H.
- CHURCH, A. H. Vegetable albinism; respiration and transpiration of albino foliage (abst.), - - - - - 2, 342
- CIAMICIAN, G. L. Effect of pressure and temperature on spectra of gases (abst.), - - - - - 1, 93
- CIAMICIAN, G. L., and M. Dennstedt. Action of cyanogen chloride on potassium-pyrrol (abst.), 5, 64: Action of acetic anhydride and benzoic anhydride on pyrrol (abst.), - - - 7, 84
- CIAMICIAN, G. L. and P. Silber. On the synthesis of pyrocoll (abst.), 6, 86: A blue dye-stuff from pyrrol (abst.), - 6, 161
- CIAMICIAN, G. L. See also Weidel, H.
- CLAERSON, P. Normal and acid methyl and ethyl sulphates (abst.), 1, 492: Sulphates of polyhydric alcohols and carbohydrates (abst.), - - - - - 2, 288
- CLAISEN, L. Color reaction for phenylglyoxylic acid (abst.), 1, 543
- CLAISEN, L., and F. E. Matthews. Action of haloid acids on hydrocyanic acid (abst.), 4, 221: Combinations of hydrocyanic acid with hydrochloric and hydrobromic acids (abst.), - 5, 67
- CLAPARÈDE, A., and W. Smith. By-product in the manufacture

- of aurin (abst.), - - - - - 5, 234
- CLARK, E. Method of determining chromium in chrome ore, 17, 327
- CLARK, N. D. Crystallization of potassium and cesium ruthenium nitroschlorides, - - - - - 16, 395
- CLARKE, F. W. Electrolytic estimation of mercury (abst.), 1, 99 : Fractional analysis of silicates, 13, 277 : Constitution of lithia micas, 15, 245 : Reports of the committee on determinations of atomic weights, 16, 179; 17, 201; 18, 197; 19, 359; 20, 163 : Alkaline reaction of some natural silicates, - - - - - 20, 739
- CLARKE, F. W., and E. A. Schneider. Chemical constitution of talc (abst.), - - - - - 12, 351
- CLARKE, F. W. See also Beamer, M.
- CLARKE, T. See Venable, F. P.
- CLASSEN, A. Separation of ferric oxide and alumina from manganese (abst.), 1, 325 : Estimation of cobalt, nickel and zinc by precipitation as oxalates (abst.), 1, 327 : Separation of manganese from zinc (abst.), 1, 327 : New method of quantitative analysis (abst.), 1, 528 : Determination of the atomic weight of bismuth (abst.), - - - - - 12, 151
- CLASSEN, A., and R. Ludwig. Quantitative analysis by electrolysis (abst.), - - - - - 8, 76
- CLAUS, A. Synthesis of homologues of aniline, etc. (abst.), 4, 228 : Action of phosphorus pentachloride on acetyl- and benzoyl-diphenylamine (abst.), 4, 264 : Bases resulting from addition of quinoline and alkyl haloid salts (abst.), - - - - - 4, 265
- CLAUS, A., and M. Dehue. Dichloronaphthalene and chlornaphthol from  $\beta$ -naphtholsulphonic acid (abst.), - - - - - 4, 229
- CLAUS, A., and E. Istel. Tetrabromoquinoline and diiodoquinoline (abst.), - - - - - 5, 24
- CLAUS, A., and H. Oehler. Action of phosphorus pentachloride on  $\alpha$ -naphtholsulphonic acid (abst.), - - - - - 4, 228
- CLAUSNIZER, F. Sulphur oxychlorides (abst.), - - - - - 2, 60
- CLAYE, D. Examination of asphaltum (abst.), - - - - - 4, 196
- CLERMONT, P. de. Action of ammonium salts on some metallic sulphides (abst.), - - - - - 1, 331, 388
- CLERMONT, P. de, and P. Chautard. Oxidation of pyrogallol in presence of gum arabic (abst.), - - - - - 4, 237
- CLERMONT, P., and J. Frommel. Formation of aurin (abst.), 1, 386 : Observations on sulphurous baths (abst.), - - - - - 1, 389
- CLEVE, P. T. Chlorostannates of rare earths (abst.), 1, 278 : On scandium (abst.), 1, 389 : Note on didymium (abst.), 4, 240 : Remarks on didymium (abst.), 4, 240 : On samarium and its compounds (abst.), - - - - - 5, 234
- COALE, R. D. See Remsen, I.
- COATES, C. E., and W. R. Dodson. Nitrogen assimilation in the cotton plant, - - - - - 18, 425
- COCHIN, D. Non-existence of soluble alcoholic ferment (abst.), 1, 403

- COCHRAN, C. B. Study of comparative composition of milk, skim milk and whey, 15, 347: Detection of foreign fats in lard and butter, - - - - - 19, 796
- CODA, D. Estimation of zinc in its ores (abst.), - - - - - 12, 502
- COLLIER, P. Analysis of a mineral resembling thorite, 2, 73; Development of sugar in the sorghums, - - - - - 2, 75
- COLLIN, A. See Nölting, E.
- COLORIANO, [M]. Analysis of staurotide (abst.), 7, 294: Conditions of formation of two arseniates of nickel and on their constitution (abst.), 8, 49: A basic copper arseniate (abst.), 8, 164: Researches on a few crystallized arseniates (abst.), - 8, 165
- COLSON, A. Determination of sulphur in natural sulphides (abst.), 1, 487, 540: Reversion of phosphates soluble in citric acid (abst.), 2, 133: Manufacture of phosphoric acid (abst.), 2, 434: New compounds of carbon and silicon (abst.), 4, 237: Action of carbon disulphide on silicon (abst.), 4, 240: Some connections between chemistry and physics (abst.), 8, 178: Derivatives of hexamethylbenzene and of durene (abst.), 8, 182: A base derived from diquinoline (abst.), - - - 10, 190
- COLSON, A., and H. Gautier. Some derivatives of xylene (abst.), 8, 96
- COLSON, A. See also Schützenberger, P.
- COMBES, A. On the compound  $\text{NH}_3$  (abst.), 4, 240: Action of chlorinated aldehydes on benzene (abst.), 6, 165: Derivatives of acetylacetone (abst.), 9, 171: New reaction of aluminum chloride (abst.), 9, 172: Homologues of acetylacetone, etc. (abst.), - - - - - 10, 14
- COMBY, A. M. Ethanediquinolylene (abst.), - - - - - 12, 232
- COMSTOCK, W. J. Analysis of tetrahedrite from Peru (abst.), 1, 393
- CONE, E. F. Estimation of pyrrhotite in pyrites ores, - - - 18, 404
- CONINCK. See Oechsner de Coninck.
- CONRAD, E. C. See Griffiths, A. B.
- CONRAD, M., and M. Guthzeit. Chloromalonic acid and derivatives (abst.), - - - - - 4, 270
- COOK, A. D. Method of preparing a strictly neutral ammonium citrate solution, - - - - - 20, 585
- COOPER, W. J. See Wanklyn, J. A.
- COPPET, L. C. de. Heat evolved on mixing anhydrous sodium sulphate with water (abst.), - - - - - 1, 395
- CORNWALL, H. B. Kerosene oil, P. 1, 71: Analysis of potable waters, P. 1, 201: Methods of butter analysis (abst.), - 8, 28
- COSSA, A. Serpentine of Venayes (Vallée d'Aoste) (abst.), - 1, 275
- COWPER, R. Solubility of glass in certain reagents (abst.), 4, 219: Analysis of oxidized iron from condenser (abst.), 4, 219: Action of chlorine on certain metals (abst.), - - - 5, 99
- COWPER, R., and V. B. Lewes. Oxidation of phosphorus at a low temperature, and the alleged decomposition of phosphorous anhydride by sunlight (abst.), - - - - - 6, 44

- CRAFTS, J. M. See Ador, E., and Friedel, C.
- CRAMPTON, C. A. Glucose in butter, - - - - 20, 201
- CRAYER, H. W. See Noyes, W. A.
- CRAWLEY, J. T. Spontaneous combustion of molasses, - - 19, 538
- CRESSNER. See Kressner.
- CROBAUGH, F. L. Estimation of graphite in pig metal, - 16, 104
- CROOK, W. G. Method of distinguishing butter from other fats (abst.), - - - - 1, 568
- CROOKES, W., W. Odling, and C. M. Tidy. Colorimeter for water analysis (abst.), - - - - 4, 163
- CROSS, C. F., and E. J. Bevan. Chemistry of bast fibers (abst.), 4, 169: Apparatus for determination of melting-points (abst.), 4, 169: On lignification (abst.), 5, 91: Oxidation of cellulose (abst.), 5, 92: On the oxidation of cellulose with special reference to bleaching and dyeing (abst.), 6, 197: Combustion of carbohydrates by means of chromic acid (abst.), - 7, 293
- CROSS, C. F., E. J. Bevan and C. Beadle. Furfural-yielding constituents of plants, 17, 286: The natural oxycelluloses, 18, 8
- CROSS, C. F., and A. Higgin. Reaction of chromic anhydride with sulphuric acid (abst.), - - - - 4, 170
- CROSS, C. F. See also Green, A. G.
- CROSSMAN, T. The analysis of malt, - - - - 16, 559
- CUNDALL, J. T. See Ramsay, W., and Shennstone, W. A.
- CURTIUS, T. On hydrazoic acid (azoimide) (abst.), - - 12, 473
- CURTIUS, T., and R. Jay. Hydrazine from aldehyde-ammonia (abst.), - - - - 12, 165
- CURTMAN, C. O. Detection of salicylic acid (abst.), 9, 15: Detection of aniline colors in wines, etc. (abst.), 9, 201: On some of the arsenic tests of the U. S. Pharmacopoeia (1890), 16, 580: On the hydration of calcium bromide and iodide, 16, 621: On the quality of potassium iodide sold in the market as U. S. P., 16, 678
- CUSHMAN, A. S., and J. Hayes-Campbell. Volumetric determination of lead, - - - - 17, 901
- CUSHMAN, B. S. See Dennis, L. M.
- CZUMPELITZ. Color reactions of alkaloids (abst.), - - 4, 193
- DAFERT, F. W. See Beutell, A.
- DAHL, T. A new metal (norwegium) (abst.), 1, 398: Atomic weight of norwegium (abst.), - - - - 1, 527
- DAHM, G. Determination of alcohol in wine (abst.), - - 1, 572
- DALCHÉ and Villejean. On the toxic character of bismuth (abst.), 10, 77
- DALE, R. S., and C. Schorlemmer. Aurin (abst.), 2, 51: Phenolates of amido bases (abst.), - - - - 5, 100
- DALES, B. Electrolytic determination of cadmium, 19, (26): See also Avery, S.
- DAL SIE, G. Active principle of insect powder (abst.), - - 1, 390
- DAMM, G., and L. Schreiner. Resorcinol dyestuffs (abst.), - 4, 268
- DANA, E. S. See Brush, G. J.

- DANILEWSKI, A. Studies of albuminoids (abst.), - - - 6, 95
- DANNENBERG, E. Determination of colchicine (abst.), - - 1, 106
- DARTON, N. H. Modification of Mohr's burette, 3, 124: Estimation of tannic acid in tanning materials, 4, 4: Convenient form of weighing flask to deliver as a burette, 4, 6: Comparative values of several methods of determining tannic acid, 4, 49, 62: Ammonia process for water analysis - - - - - 5, 104
- DAVENPORT, B. F. Rapid filtration (abst.), - - - - 6, 49
- DAVID, J. Separation of oleic acid from stearic acid (abst.), 1, 360: Determination of glycerol in fats (abst.), - - - 4, 239
- DAVID, R. See Prunier, L.
- DAVIDOFF, OLGA. Correspondence from Russian Chemical Society (abst.), - - - - 6, 77, 95, 128, 135, 157, 167
- DAVIS, G. E. Hydrogen dioxide as a reagent in chemical analysis (abst.), 1, 335: Determination of sulphide, sulphite and thiosulphate in a solution (abst.), 4, 160: Determination of free and combined chlorine in gases escaping from chemical works (abst.), 4, 161: The distillation of coal and recovery of hydrocarbons from the gas (abst.), - - - - - 6, 27
- DAVIS, G. W. See Smith, W.
- DAVOLL, D. L., JR. Fallacies of post-mortem tests for morphine - 16, 799
- DAVY, E. W. Reagent for phenol (abst.), 1, 339: Test for nitrites in water (abst.), - - - - - 4, 163
- DAY, T. C. Estimation of nitrites, alone or in the presence of nitrates and chlorides (abst.), - - - - - 10, 85
- DAY, W. C., and A. P. Bryant. Note on Pemberton's method of phosphoric acid determination as compared, etc., - - - 16, 282
- DE BENNEVILLE, J. S. Laboratory notes, 16, 65: Experiments on the analysis of pig copper, brasses, and bronzes, 16, 133: Experiments on a ferrotungsten, 16, 297: Some alloys of iron with molybdenum, tungsten, and chromium, as solutions, 16, 735: Carbides of iron with chromium, molybdenum and tungsten, 17, 791: Note on the separation of silicic and tungstic acids, - - - 19, 377
- DEBRAY, H. Reactions of mercuric chloride (abst.), 4, 238: See also Deville, H. S.-C.
- DE CHALMOT, G. Are pentoses formed by the assimilation process? 15, 618: Silicides of iron, 17, 923: See also Morehead, J. T.
- DECHAN, M. On soaps (abst.), - - - - - 8, 43
- DECHAN, M., and T. Maben. Formation of basic salts in the saponification of fats and oils (abst.), - - - - - 8, 41
- DEERING, W. H. See Abel, Sir F.
- DEFREN, G. Determination of reducing sugars in terms of cupric oxide, 18, 749: See also Rolfe, G. W.
- DEGENER, P. Volumetric estimation of phenol (abst.), 1, 581: Action of fused alkalis on aromatic sulphonc acids (abst.), - - 2, 294
- DEHÉRAIN, P. P., and L. Maquenne. Reduction of nitrates in soils (abst.), - - - - - 5, 117, 118, 119

- DEHNE, M. See Claus, A.
- DEICHMÜLLER, A., F. Szymanski, and B. Tollens.  $\beta$ -Hydroxybutyric acid in diabetic urine (abst.), - - - - - 7, 177
- DE KONINCK, L. L. Test for chlorides in presence of bromides and iodides (abst.), 7, 209 : Determination of carbon in iron (abst.), 10, 155 : New hydrogen sulphide generator specially adapted for use in analytical laboratories, - - - - - 16, 63.
- DE KONINCK, L. L., and A. Lecrenier. Separation of gold and platinum from arsenic, antimony, and tin (abst.), - - - - - 10, 156
- DE KONINGH, L. Separation of solid and liquid fatty acids, 17, 740 : Estimation of boric acid in foods, 19, 55 : Note on the volatility of boric acid ; separation of boric from phosphoric acid ; estimation of boric acid in foods, 19, 385 : Estimation of mineral matter in rubber goods, 19, 952 : See also Muter, J.
- DELACHANAL, B., and A. Mermet. Determination of sulphur in organic compounds ; a claim of priority (abst.), - - - - - 1, 487, 542
- DELACHANAL, B. See Vincent, C.
- DELACRE, M. Some chlorinated derivatives of ethyl acetate (abst.), 10, 17
- DELAFontaine, M., and C. E. Linebarger. Reaction between carbon tetrachloride and the oxides of niobium and tantalum, - - - - - 18, 532
- DE LAIRE, G., and F. Tiemann. Iridin, the glucoside of the iris root, - - - - - 15, 351, 400 : 16, 847
- DELVAUX, G. Separation of nickel from cobalt (abst.), - - - - - 4, 166
- DEMARÇAY, E. Citric acid and its homologues (abst.), 1, 173 : Preparation of acetonitrile (abst.), 2, 432 : Vaporization of metals *in vacuo* (abst.), 4, 242 : Color-reaction of rhodium (abst.), 8, 58 : See also Cahours, A.
- DEMEL, W. Note on bodies combustible with difficulty (abst.), 4, 269 : The dopplerite of Aussee (abst.), - - - - - 5, 63
- DEMOLE, E. Partial synthesis of sugar of milk, and contributions to the synthesis of cane-sugar (abst.), 2, 89 : Constitution of dibromethylene (abst.), - - - - - 2, 90
- DEMSKI, H. See Morawski, T.
- DEMUTH, R., and V. Meyer. Action of oxygen on zinc-ethyl (abst.), 12, 156 : Guinochet's isomeric carballylic acid (abst.), 12, 166 : Determination of vapor densities below the boiling-point (abst.), 12, 168
- DENIGÈS, G. Distinction of phosphorus oxychloride from trichloride (abst.), - - - - - 12, 70
- DENNIS, L. M. Gerhard Krüss (obituary), 17, 423 : Separation of thorium from the other rare earths by means of potassium trinitride, 18, 947 : New form of discharger for spark spectra of solutions, 20, 1
- DENNIS, L. M., C. H. Benedict, and A. C. Gill. Salts of hydronitric acid, - - - - - 20, 225.
- DENNIS, L. M., and E. M. Chânot. Contributions to the chemistry of didymium, - - - - - 19, 799
- DENNIS, L. M., and B. S. Cushman. On the analytical properties of iron phosphide and phosphate, - - - - - 16, 477

- DENNIS, L. M., Martha Doan, and A. C. Gill. New compounds of thallium, - - - - - 18, 970
- DENNIS, L. M., and C. G. Edgar. Comparison of various rapid methods for determining carbon dioxide and carbon monoxide, 19, 859
- DENNIS, L. M., and W. H. Magee. Contributions to the chemistry of cerium, - - - - - 16, 649
- DENNIS, L. M., and A. E. Spencer. Zirconium tetraiodide, - - - - - 18, 673
- DENNSTEDT, M. Derivatives of *p*-bromaniline (abst.), 2, 224 : Crystallographic description of benzyl-*o*-thioformate (abst.), 2, 224 : See also Ciamician, G. L.
- DENZEL, J. Chlorobromine and bromine substitution products of ethylene (abst.), 1, 248 : Nomenclature and boiling-points of chlorobromine and bromine substitution products of ethane and ethylene (abst.), - - - - - 1, 248
- DÉON, P. H. See Horsin-Déon, P.
- DE ROODE, R. Determination of phosphoric acid by the molybdic acid process, 17, 43 : Addition of calcium chloride in the determination of potash, 17, 46 : Preparation of ammonium citrate solution, 17, 47 : Determination of potash in kainite, 17, 85 : Oxidation of organic matter and decomposition of ammonium salts by aqua regia in determination of potash, - - - - - 17, 86
- DERVIN, E. On the sulphides of phosphorus (abst.), - - - - - 6, 189
- DESCAMPS, A. Preparation and properties of potassium cobaltocyanide and its derivatives (abst.), - - - - - 1, 272
- DE SCHWEINITZ, E. A. Some cotton-seed analyses, 6, 216 : Importance of the study of biochemistry, 16, 261 : Convenient lamp for generating formaldehyde gas and acetic aldehyde, 19, (11) : Mineral constituents of tubercle bacilli, 20, 618, (66) : Convenient dropping bottle, 20, (4) : Pasteur milk laboratory at Washington, 20, (48)
- DE SCHWEINITZ, E. A., and M. Dorset. Composition of the tuberculosis and glanders bacilli, 17, 605 : Fats contained in the tuberculosis bacilli, 18, 449 : Some products of the tuberculosis bacillus, - - - - - 19, 782
- DE SCHWEINITZ, E. A., and J. A. Emery. Use of the calorimeter in detecting adulterations of butter and lard, 18, 174 : See also Schweinitz, E. A. von.
- DESHAYES, V. Eggertz's method of determining carbon in iron and steel (abst.), 1, 271, 371 : Chemical composition and mechanical properties of steel (abst.), - - - - - 1, 278
- DESI, E. D. Oxides of tungsten, - - - - - 19, 213
- DEUTSCH, A. Ethers of tribasic formic acid (abst.), 1, 167 : See also Gabriel, S.
- DEVILLE, H. S.-C., and H. Debray. Explosive alloys of zinc with platinum metals (abst.), - - - - - 4, 240
- DEWAR, J. Manufacture of chlorine from magnesium chloride (abst.), 9, 224
- DEWEY, F. P. Separation of tin from arsenic and antimony (abst.), 1, 483 : Accuracy of the commercial assay for silver, 16, 505 : Sul-

- phuric acid process of refining lixiviation sulphides, 18, 643, (76):  
 The actual accuracy of chemical analysis, - - - 18, 808, (88)
- DICKMANN, F. Water analysis (abst.), - - - 12, 413
- DIECK, H. L. See Smith, E. F.
- DIEHL, O. C. See Trowbridge, P. F.
- DIETERICH, E. Solubility of opium alkaloids (abst.), - - 9, 216
- DIETZELL, B. E. Evolution of free nitrogen in fermentation (abst.), 4, 267
- DIETZELL, B. E., and M. G. Kressner. Determination of phosphoric acid in fish guano (abst.), - - - 1, 355
- DIRVELL, P. J. Separation of gold and platinum from antimony, arsenic, and tin (abst.), - - - 8, 278
- DITTE, A. Action of acid solutions on stannous oxide (abst.), 4, 234:  
 Action of alkaline solutions on stannous oxide (abst.), 4, 235:  
 Action of potassium hydroxide on lead oxide (abst.), 4, 237:  
 Decomposition of lead salts by alkalies (abst.), 4, 237:  
 Combinations of disulphide and diselenide of tin (abst.), 5, 117:  
 Production of crystallized uranates (abst.), 5, 120: Combination of silver nitrate with alkaline nitrates (abst.), 8, 50: Carbonate of aniline (abst.), - - - 10, 114
- DITTMAR, W. Disintegration of chrome iron ore (abst.), - - 1, 104
- DIVERS, E. Theory of the constitution of the fulminates (abst.), 6, 45: Origin of calcium thiosulphate (abst.), - - 7, 28
- DIVERS, E., and M. Kawakita. On the constitution of the fulminates (abst.), 6, 45: On Liebig's production of fulminating silver without the use of nitric acid (abst.), 6, 46: On hyponitrites (abst.), 6, 75: Decomposition of silver fulminate by hydrochloric acid (abst.), 6, 90
- DIVERS, E., and T. Shimidzu. Magnesium hydrosulphide and its use as a source of hydrogen sulphide (abst.), 6, 311: Use of sulphuric acid in place of nitric acid to oxidize sulphides, etc. (abst.), - 7, 211
- DIVERS, E., and M. Shimosé. New oxide of tellurium (abst.), 5, 115: Tellurium sulphoxide (abst.), 5, 116: New reaction of tellurium compounds (abst.), - - - 5, 116
- DIXON, H. B., and H. W. Smith. Incompleteness of combustion in gaseous explosions (abst.), - - - 10, 179
- DOAN, MARTHA. See Dennis, L. M.
- DOBBIN, L. Estimation of caustic alkali in the presence of alkaline carbonates (abst.), - - - 10, 181
- DODSON, W. R. See Coates, C. E.
- DORBNER, O. Combinations of benzotrichloride with aromatic bases (abst.), - - - 4, 207
- DOELTER, C. Method of determining ferrous oxide in silicates (abst.), 1, 85
- DOGIEL, J. Chemical theory of effects of arsenic (abst.), - 4, 268
- DOHME, A. R. L., and H. Engelhardt. Chemistry of *Cascara sagrada*, 20, 534
- DOOLITTLE, O. S. Torsion viscosimeter, 15, 173: Standardizing the torsion viscosimeter, - - - 15, 454
- DOOLITTLE, O. S., and A. Havenson. Notes and queries on Dudley's method of determining phosphorus in steel, - - - 16, 234



- DONALD, G. See Mills, E. J.
- DONATH, E. Method of detecting monochromates and free chromic acid in bichromates (abst.), 1, 89 : Tarry ingredients in commercial ammonia (abst.), - - - - - 1, 92
- DONATH, E., and F. Müllner. Separation of stannic oxide from tungstic oxide (abst.), - - - - - 9, 200
- DOREMUS, C. A. Contributions to the literature of milk analysis, P. 1, 227: Abnormal constituents of the blood due to leucocythemia, P. 1, 2, 29: Wilkinson's process for manufacture of illuminating gas from wood, 2, 449 : Composition of elephant's milk, 3, 55: 4, 157 : A simple apparatus for the rapid estimation of urea, 7, 72 : In rebuttal (reply to Dr. Greene's remarks), 7, 168 : Preparation of zirconia, 8, 91 : Fluorides as agents for softening hard water, 12, 303 : Post-mortem diffusion of arsenic, 13, 283 : Purification of boiler feed water, 15, 610 : Chemical history of a case of combined antimonial and arsenical poisoning, 17, 667 : Presence of oil in boiler scale, 18, 741 : Method of collecting and analyzing the gases in canned goods, - - - - - 19, 733
- DORP, W. A. VAN. See Hoogewerff, S.
- DORRANCE, J. T. See Noyes, A. A.
- DORSET, M. See De Schweinitz, E. A.
- DOTTO-SCRIBANI, F. Determination of nitric acid in lime-juice (abst.), - - - - - 1, 367
- DRAGENDORFF, G. Brucine reaction with chromic acid (abst.), 1, 100
- DRALE, C. Oxidation of purpurin (abst.), 7, 59 : On haematoxylin and brasilin (abst.), - - - - - 7, 60
- DRAPER, J. W. Science in America (presidential address), - P. 1, 135
- DRECHSEL, E. Precipitation of calcium carbonate (abst.), 1, 334 : Preparation of crystalline albumin compounds (abst.), 1, 494 : Electrolytic experiments (abst.), 2, 135 : Carbamidopalladious chloride (abst.), 2, 137 : Hypoxanthine, a product of decomposition of certain albuminoids (abst.), 2, 224 : Electrolysis of normal caproic acid with the alternating current (abst.), 8, 274 : Formation of urea from albumin (abst.), - - - - - 12, 475
- DREWSSEN, V. See Baeyer, A.
- DROWN, T. M. Pulverized zinc for reduction of iron (abst.), 1, 96 : Determination of silicon in pig iron and steel (abst.), 1, 285, 371 : Lewis Mills Norton, Ph.D. (obituary), - - - - - 15, 241
- DROWN, T. M., and P. W. Shimer. Analysis of titaniferous iron ores (abst.), - - - - - 4, 164
- DUBOIS, C., and L. Padé. Studies on fatty bodies (abst.), 7, 288 : Examination of fatty matters (abst.), - - - - - 8, 83
- DUBOIS, H. W. See Mixer, C. T.
- DUCLAUX, E. Gastric digestion (abst.), 4, 234 : Germination in soil rich in organic matters, but free from microbes (abst.), 7, 25 : Influence of sunlight on vitality of germs of microbes (abst.), 7, 77 : Studies on butter (abst.), 8, 107 : Rancidity of butter (abst.), - 8, 108

- DUDLEY, C. B. Circular to iron and steel chemists on method of determining phosphorus, 16, 286 : Some present possibilities in the analysis of iron and steel (presidential address), 19, 93 : The dignity of analytical work (presidential address), - - - 20, 81
- DUDLEY, C. B., and F. N. Pease. Standard methods for analysis of iron and steel, 15, 501 : An attempt to find the amount of phosphorus in three samples of steel, 16, 217 : Some points in the determination of phosphorus in steel by the volumetric method, 16, 224
- DUDLEY, C. B. See also Noyes, W. A.
- DUDLEY, W. L. Action of gaseous hydrochloric acid and oxygen on platinum metals, 15, 272 : Electro-deposition of iridium, method of maintaining the uniform composition of an electroplating bath, 15, 274 : Opening of the Kent Chemical Laboratory of the University of Chicago, 16, 213 : Relationship of heat of vaporization of gases to their density and also to their boiling-point, 17, 969 : Nickel-nickelic hydrate, 18, 901 : A new volatile alkaloid, - - - 1, 286
- DÜRKOPF, E., and H. Göttisch. A new lutidine (abst.), - - - 12, 233
- DUGGAN, J. R. Determination of urea in urine (abst.), - - - 4, 196
- DUISBERG, C. Formation of *p*-toluyl-*p*-methylimisatin from dichloroacetic acid and *p*-toluidine (abst.), - - - 7, 205
- DULIN, R. S. Wet assay of copper, - - - 17, 346
- DUMAS, J. B. Presence of oxygen in metallic silver (abst.), 1, 527 : Normal carbon dioxide in the atmosphere (abst.), - - - 4, 232
- DUMREICHER, O. VON. Action of aluminum chloride on monobromobenzene (abst.), - - - 4, 174
- DUNHAM, E. K. Value of a bacteriological examination of water, 19, 591
- DUNNINGTON, F. P. Determination of sulphur in coal, P. 1, 97 : Analysis of aragonite containing lead, P. 2, 14 : Determination of copper, P. 2, 140 : Manganese in the ash of wheat, P. 2, 141 : Analyses of ashes of certain weeds, 2, 24 : Metatitanic acid and the estimation of titanium by hydrogen dioxide, 13, 210 : Improved gas regulator, 17, 781 : Collector for distillation of ammonia from water, - - - 20, 286
- DUPETIT, G. See Gayon, U.
- DUPRÉ, A. Relations between amounts of silica and alumina in pure wheat (abst.), 1, 110 : Detection of foreign coloring-matters in wine (abst.), 1, 577 : Examination of potable waters (abst.), - 4, 162
- DUPRÉ, A., and H. W. Hake. Gravimetric determination of minute quantities of carbon (abst.), - - - 1, 108
- DUVILLIER, E. Recovery of platinum from residues (abst.), 1, 587 : Compounds of the creatinine group (abst.), - - - 4, 273
- DUVILLIER, E., and A. Buisine. Commercial trimethylamine (abst.), 1, 398
- DYSON, S. Brominated carbon compounds obtained in the manufacture of bromine (abst.), 5, 93 : See also Thorpe, T. E.
- EAVENSON, A. See Doolittle, O. S.
- EDDY, H. P. Sewage disposal at Worcester, Mass., - - - 16, 682

- EDER, J. M. Characteristic of Chinese tea, and detection of adulterations (abst.), 1, 362 : Behavior of glue and carbohydrates with chromates (abst.), 1, 493 : Chemical composition of pyroxylin and the formula of cellulose (abst.), 2, 173 : New chemical photometer (abst.), - - - - - 2, 173
- EDGAR, C. G. See Dennis, L. M.
- EDLER, E. Nitropseudocumene, pseudocumidine, and pseudocumenol, holding the position 1 : 3 : 4 : 5 (abst.), - - - - - 7, 249
- EFFRONT, J. Isomeric isobutyl-*o*-amidotoluenes (abst.), 7, 88 : Method for the determination of starch and different kinds of sugars (abst.), - - - - - 9, 36
- EGLI, K. Products of the dry distillation of ammonium benzene-sulphonate (abst.), - - - - - 7, 231
- EHRENBERG, A. On mercury fulminate (abst.), 7, 122 : Sodium fulminate (abst.), 7, 201 : Fulminuric acid (abst.), 7, 248 : Chlor- and brom- fulminuric acid (abst.), - - - - - 7, 248
- EHRENFELD, C. H. Mineral group from York, Pa., 15, 543 : Chemical behavior of tungsten and molybdenum, and their trioxides, 17, 381
- EHRHARDT, R. See Gattermann, L.
- EHRLICH, L. On gallium (abst.), - - - - - 7, 77
- EICHBAUM, F. Preparation of soap (abst.), - - - - - 8, 206
- EILOART, A. Some reactions of carbon dioxide, carbon disulphide, and sulphur dioxide (abst.), 7, 286 : Absorbents for carbon disulphide vapor (abst.), 7, 286 : The calorimetric bomb as a combustion furnace for ultimate analysis (abst.), 10, 172 : Index to literature of stereochemistry, 14, 241 : Note on the stereochemistry of creatinines, - - - - - 14, 284
- EINHORN, A. Preparation of *o*-nitrobenzaldehyde (abst.), 6, 87 : The force function in crystals (abst.), 7, 199 : Synthesis of alcohol-acids of the pyridine series (abst.), - - - - - 12, 160
- EINHORN, A., and A. Marquardt. Dextro-cocaine (abst.), - - - - - 12, 164
- EKSTRAND, A. E. Mononitro-*a*-naphthoic acid (abst.), - - - - - 7, 147
- ELIASBERG, S. Separation of zinc and cadmium by electrolysis (abst.), - - - - - 7, 296
- ELLIOTT, A. H. Table of values of sulphuric acid, P. 2, 26 : Apparatus for rapid analysis of mixture of gases, 3, 91 : Nitro-saccharose, 4, 147 : Nitrosaccharose : a correction, - - - - - 4, 186
- ELLIOTT, A. H., and F. Sands. Notes on bone oil, - - - - - 4, 153
- ELLMS, J. W. See Richards, Ellen H.
- ELSBACH, L. Compounds of naphthoquinone with toluidine and ethylaniline (abst.), - - - - - 5, 19
- ELTZBACHER, F. See Anschütz, R.
- EMERY, J. A. See De Schweinitz, E. A.
- EMMENS, S. H. Some new nickel minerals, 14, 205 : Constitution of nickeliferous pyrrhotite, - - - - - 14, 369
- ELLIS, J. On Maumené's test for oils (abst.), - - - - - 8, 108
- ELLIS, W. H. Official milk analysis in Canada, - - - - - 14, 363

- EMMERLING, O. Metallic phosphides (abst.), - - - 1, 168
- ENDEMANN, H. Determination of the relative effectiveness of disinfectants, P. 1, 24 : Bismuth in lead in the manufacture of white lead, P. 1, 70 : Alcohol *in statu nascendi*, P. 1, 173 : Note on density of chlorine at high temperatures, 1, 310 : Review of latest investigations on dissociation of elements, 1, 313 : Boracic acid as a preservative, 1, 477 : On the constitution of ultramarine, 2, 381 : On some quinoline substitution products, 7, 222 : Formation of ammonium thiosulphate in gas generators, 8, 47 : Photographic process by means of aniline black, 8, 189 : Paul Casamajor (obituary), 9, 206 : Dr. Meinhard Alsberg (obituary), - - - 19, 954
- ENDEMANN, H., and G. A. Prochazka. Laboratory notes, 1, 525 : Preparation of standard soda solution, 1, 525 : Hydrobromic acid as a very delicate test for copper, 1, 525 : Examination of sweet potatoes, - - - 1, 526
- ENDEMANN, H. See also Prochazka, G. A.
- ENGEL, R. Solution of magnesium carbonate in carbonic acid water (abst.), 7, 114 : Solubility of copper sulphate in presence of ammonium sulphate (abst.), 8, 34 : Influence of acid ammonium oxalate on the solubility of neutral oxalate (abst.), 8, 71 : Reagent to detect the acid nature of weak acids, etc. (abst.), 8, 79 : Hydrates of zinc chloride (abst.), 8, 162 : Variations of solubility of some chlorides in presence of hydrochloric acid (abst.), 8, 163 : Combinations of zinc chloride with hydrochloric acid (abst.), 8, 163 : Alcoholate of potassium hydroxide (abst.), 8, 273 : An organic acid obtained by the action of alcoholic potassium hydroxide on a mixture of chloroform and acetone (abst.), - 9, 102
- ENGEL, R., and A. de Girard. New method of making acetal (abst.), 2, 432
- ENGEL, R., and A. Moitessier. Dissociation of ammonium sulphide (abst.), - - - 1, 402
- ENGELHARDT, H. See Dohme, A. R. L.
- ENGLE, W. D. Action of metallic thiocyanates upon chlorhydrins, 20, 668
- ENGLER, C. Viscosity of lubricating oils (abst.), 7, 93 : Artificial production of petroleum, - - - 15, 379
- ENOCH, C. See Tafel, J.
- ERDMANN, H. Phenylisocrotonic acid and nitric acid. Phenyl-nitroethylene (abst.), 7, 87 : Conversion of naphthylaminesulphonic acids into dichloronaphthalene (abst.), 10, 42 : See also Volhard, J.
- ERLENMEYER, E. The two isomeric dibromopropanes (abst.), 2, 181 : Phenyllactic acids (abst.), 2, 366 : Phenylbromolactic acid (abst.), 2, 366 : Synthesis of cinnamic acid (abst.), - - - 5, 65
- ERLENMEYER, E., and C. L. Müller. Halogenized and hydroxylized organic acids (abst.), - - - 4, 175
- ESCHELLMANN, G. The loss of niter in the manufacture of sulphuric acid (abst.), - - - 6, 141
- ESSNER, J. C. See Oechsner de Coninck, W.

- ÉTARD, A. Researches upon sulphates (abst.), 1, 278: Isomery of cuprous sulphites (abst.), 4, 241: Preparation of hydriodic acid (abst.), 10, 77: See also Gal, H.
- EVANS, F. P., and W. Ramsay. Halogen compounds of selenium (abst.), - - - - - 6, 79
- EVERHARDT, E. See Leeds, A. R.
- EWELL, E. E. Chemistry of the *Cactaceae*, 18, 624, (83): Condenser for distillation of liquids having low boiling-points, - - - 19, 398
- EWELL, E. E., and H. W. Wiley. Some products of cassava, 15, 78: Effects of acidity on the development of nitrifying organisms, - - - - - 18, 475, (82)
- EWELL, E. E. See also Wiley, H. W.
- EYMONNET, L. See Lepine, R.
- EYSTER, G. S. Determination of the rotation of left-handed solutions, 5, 104: New overflow pipette, - - - - - 5, 218
- FABRE, C. See Berthelot, M.
- FAHLBAUM. Purification of mineral oil with sulphurous acid (abst.), 8, 206
- FAHLBERG, C. On the liquid toluenesulphonchloride (abst.), 1, 287: See also Remsen, I.
- FARRINGTON, E. H. Acidity of milk increased by boracic acid, - 18, 847
- FAUCONNIER, A. Determination of urea by the alkaline hypochlorites and hypobromites (abst.), 2, 132: Mannide (abst.), 5, 120: On the second anhydride of mannitol (abst.), - - - 6, 38
- FAWSITT, C. A. Action of sulphur chloride on oils (abst.), - 10, 116
- FAXON, W. A. See Rolfe, G. W.
- FAY, H., and H. P. Talbot. Segregation of carbon in a piece of boiler plate, - - - - - 20, 614
- FEHRMANN, A. Preparation of lead dioxide (abst.), - - - 5, 51
- FEHRMANN, W. Auramines (abst.), - - - - - 9, 212
- FELS, J. Disintegration and solution of chrome iron stone (abst.), 1, 558
- FEIT, W. Determination of mercury (abst.), 12, 17: Determination of thallium (abst.), - - - - - 12, 17
- FENTON, H. J. H. Action of hypochlorites on urea (abst.), 1, 101: Transformation of urea into cyanamide (abst.), - - - 4, 221
- FERGUSON, W. C. Compressed air wash-bottle, 16, 148: Arrangement for conducting a number of laboratory distillations with steam, simultaneously, 16 150: Remarks about basic sulphate of alumina, 16, 153
- FESER. Optical estimation of fat in milk (abst.), - - - 1, 570
- FIELD, C., and E. F. Smith. Separation of vanadium from arsenic, 18, 1051
- FIELD, W. D. Pyroxylin, its manufacture and applications, 15, 140; 16, 487, 543: Note on the manufacture of the prussiates, - 15, 569
- FIELDS, J. Modification of the Gunning method for nitrates, - 18, 1102
- FILHOL, E., and Senderens. Arsenates neutral to litmus (abst.), 4, 272
- FINKNER, R. Detection of mineral oil in resin oil (abst.), 8, 65: Elaidin reaction (abst.), 8, 232: Examination of soap powders (abst.), - - - - - 8, 233
- FINKLER, D. See Pflüger, E.

- FIREMAN, P. New mode of formation of tertiary and quaternary phosphines, 18, (89): Observations on the centric benzene formula and the aromatic character, - - - - 20, (66)
- FISCHER, B., and O. Philipp. Dimethylazobenzene as an indicator in alkalimetry (abst.), - - - - 7, 204
- FISCHER, EMIL. On caffeine (abst.), 4, 174: Transformation of xanthine into theobromine and caffeine (abst.), 4, 264: Note on triacetonealkamine (abst.), 5, 134: On uric acid (abst.), 7, 29: Synthesis of glucose (abst.), 12, 157: Synthesis of mannose and levulose (abst.), 12, 165: Synthesis in the sugar group, - 12, 340, 400, 461
- FISCHER, E., and H. Koch. Ethylphthalylacetoacetate (abst.), - 5, 238
- FISCHER, E., and H. Kuzel. Quinazole compounds (abst.), - 5, 238
- FISCHER, E., and J. Tafel. Synthetical experiments in the sugar group (abst.), - - - - 9, 191
- FISCHER, EMIL. See also Penzoldt, F.
- FISCHER, EUGEN. New series of dye-stuffs (abst.), 2, 367: Phenanthrenedisulphonic acid and some of its derivatives (abst.), - 2, 367
- FISCHER, F. Examination of butter by polarized light (abst.), 1, 358: Apparatus for determination of oxygen in the air (abst.), 1, 585: New form of calorimeter (abst.), - - - 1, 586
- FISCHER, G. New dye-stuff from *o*-amidophenol (abst.) - 1, 493
- FISCHER, L. A. Facilities for standardizing chemical apparatus afforded by foreign governments and our own, - - 20, 912
- FISCHER, O. Nicotinic acid from pyridine (abst.), 4, 176: Condensation products of aromatic bases (abst.), - - - 5, 19
- FISCHER, O., and L. German. On the violet derivatives of triphenylmethane (abst.), - - - - 5, 241
- FISCHER, O., and G. Körner. On the violet derivatives of triphenylmethane (abst.), 6, 85: New method of producing acridine (abst.), 6, 86: Chrysaniline and some of its derivatives (abst.), - 6, 237
- FISCHER, O., and C. Rudolph. New class of dye-stuffs (abst.), 5, 28
- FISCHER, O. See also Bedall, K.
- FISCHER, R. Alkaloids of *Sabadilla*, - - - - 14, 226
- FITTICA, F. A second monobrombenzene (abst.), - - - 12, 352
- FITTIG, R. Researches upon the unsaturated acids (abst.), 1, 236: Constitution of tiglic acid and angelic acid (abst.), 1, 241: Formation of unsaturated hydrocarbons from unsaturated acids (abst.), 1, 246: Constitution of vinaconic acid (abst.), - - 7, 82
- FITTIG, R., and F. Binder. Addition products of cinnamic acid (abst.), - - - - 1, 242
- FITTIG, R., and H. Liepmann. Constitution of isodiphenic acid and fluoranthrene (abst.), - - - - 1, 169
- FITTIG, R., and F. Röder. An acid isomeric with itaconic acid (abst.), - - - - 5, 124
- FITTIG, R., and C. Wurster. Atropic and isotropic acids (abst.), 1, 243
- FITZ, A. Normal propyl alcohol from glycerol (abst.), - 2, 94
- FLAVITZKY, F. Relations between amounts of rotation of plane of

- polarization (abst.), 4, 173 : Molecular refraction of the terpenes (abst.), - - - - - 4, 173
- FLECHSIG, E. See Weiske, H.
- FLECK, H. Separation of trimethylamine from ammonia, - 18, 670
- FLECK, H., and L. L. Bassett. Reduction with magnesium amalgam, - - - - - 17, 789
- FLEISCHER, E. The hygrometer in the desiccator (abst.), - 6, 98
- FLEISCHMAN, L. Detection of alcohol in essential oils and chloroform (abst.), - - - - - 1, 582
- FLEISSNER, F. See Lippmann, E.
- FLETCHER, J. New method of preparing hydrogen sulphide (abst.), 1, 586
- FLETCHER, T. Coal gas as a labor-saving agent in trade (abst.), 6, 106
- FLEURY, G. Estimation of alcohol in wine (abst.), - 1, 573
- FLIGHT, W. Composition of ancient alloys and metal work (abst.), 4, 171 : Action of sodium hydroxide and carbonate on feldspars and wollastonite (abst.), 4, 199 : Two new aluminous species, evigtokite and liskeardite (abst.), - - - - - 5, 97
- FLIMM, W. Synthesis of indigo from monobromacetanilide (abst.), 12, 163
- FLINTERMANN, R. F., and A. B. Prescott. Dipyridentrimethylenedibromide, etc., - - - - - 18, 28
- FLÜCKIGER, F. A. Determination of alkaloids in cinchona bark (abst.), 4, 193 : Determination of ash (abst.), - - - - - 10, 194
- FÖCKE, W. O. Detection of mineral oil in fatty oils and fuller's grease (abst.), - - - - - 8, 38
- FÖCKE, [M.] Separation of strychnine and morphine from fatty matters (abst.), - - - - - 9, 15
- FOERSTER, F. Quantitative determination of camphor (abst.), 12, 477
- FÖRSTER, K. Cause of Jorissen's reaction for amyl alcohol (abst.), 4, 196, 207 : Quantity of furfural contained in fermented liquors (abst.), - - - - - 4, 229
- FOERSTER, O. Apparatus for fat extraction (abst.), - - - - - 10, 69
- FORSTER, P. Coloring-matters from *Sophora japonica*, *Capparis spinosa*, and *Ruta graveolens* (abst.), - - - - - 4, 206
- FORBES, R. H. Apparatus for the estimation of carbonic acid - 16, 204
- FORCRAND, D. DE. Formation of organic ultramarines (abst.), 1, 171, 277 : Preparation of glycol by means of ethyl nitrate (abst.), 1, 390 : Hydrate of hydrogen sulphide (abst.), 4, 242 : Preparation of glyoxal (abst.), 6, 89 : Transformation of glyoxal into glycolic acid (abst.), 6, 90 : On the sulphites and bisulphites of sodium (abst.), 6, 189 : On glyoxal bisulphite of sodium (abst.), 6, 189 : Sodium glycerolate (abst.), - - - - - 8, 184
- FORD, A. P., and I. M. Bregowsky. Use of hydrofluoric acid in the determination of manganese, etc., - - - - - 20, 504
- FORDOS, M. J. Detection of fuchsine in wine (abst.), - - - 1, 574
- FÖRST, C., and C. Böhringer. Behavior and occurrence of cinchotine, hydrocinchonidine and hydroquinidine (abst.), - 4, 267
- FÖRSTER, J. The physiological effect of boric acid (abst.), - 6, 158

- FÖSTER, C. LE N. Traveling blowpipe lamp, 1, 91: detection of boric acid, - - - - - 1, 528
- FOSTER, W. Nitrogen of coal during destructive distillation, also estimation of nitrogen in coal and coke (abst.), - - - 5, 95
- FOULK, C. W. Effect of an excess of reagent in the precipitation of barium sulphate, 18, 793: Effect of excess of reagent in precipitation of magnesium ammonium phosphate, - - - 20, (47)
- FOX, W. Action of petroleum on lead (abst.), - - - 10, 92
- FOX, W., and J. A. Wanklyn. Determination of glycerol (abst.), 8, 27
- FRANCHIMONT, N. On betulin (abst.), 1, 157: Coloring-matter of sandal-wood (abst.), 1, 158: On lactucone (abst.), 1, 158: On zinc acetate (abst.), - - - - - 1, 158
- FRANCIS, E. H. Toughened filter-paper (abst.), - - - 7, 211
- FRANKFORTER, G. B. The iodides of narceine, - - - 16, 361
- FRANKLAND, P. F. Illuminating power of ethylene when burnt with non-luminous combustible gases (abst.), 6, 46: Illuminating power of hydrocarbons (abst.), 7, 213: Gasometric method of determining nitrous acid (abst.), - - - 10, 67
- FRANKLAND, P. F., and F. Jordan. Gases evolved during the conversion of grass into hay (abst.), - - - 5, 114
- FRANKLAND, P. F., and F. Turner. Action of allyl iodide upon phenol in presence of lime or aluminum foil (abst.), - 5, 234
- FRAUDE, G. Phthalein of *o*-cresol (abst.), 1, 395: Perchloric acid as a reagent for alkaloids (abst.), - - - 1, 545
- FREHSE, M. Detection and colorimetric estimation of salicylic acid (abst.), - - - - - 9, 15
- FREMERY, M. Arsenotungstic acid (abst.), - - - 6, 306
- FREMY, E. Method for analysis of vegetable tissues (abst.), - 1, 345
- FRENCH, A. Process for obtaining ammonium chloride from the nitrogen of coal, etc. (abst.), - - - 10, 184
- FRENZEL, J., and T. Weyl. Determination of casein by precipitation with sulphuric acid (abst.), - - - 8, 61
- FRESENIUS, H. Determination of arsenic in pyrites (abst.), 10, 66: Arsenic in bone phosphate fodder (abst.), - - - 11, 54
- FRESENIUS, R. Examination of commercial copper (abst.), 4, 167: Test for titanin acid (abst.), 7, 210: Separation of barium from strontium (abst.), - - - 12, 118, 410
- FRESENIUS, R., and E. Borgmann. Analysis of pure wines (abst.), 6, 97
- FRESENIUS, R., and E. Hintz. Determination of tin in tin slags (abst.), 7, 210: Analysis of chrome iron (abst.), - 12, 117
- FRESENIUS, R., and W. F. Fresenius. Detection of adulterations in Portland cement (abst.), - - - 6, 290
- FRESENIUS, W. Variations in quality of Swedish filter-paper (abst.), 1, 376: Use of asbestos in filtration (abst.), 10, 69: Determination of phosphoric acid in sweet wines (abst.), 11, 53: Examination of alcoholic liquors (abst.), - - - 12, 503
- FRESENIUS, W. F. See Fresenius, R.



- FREUND, M., and P. Herrmann. A new hexylamine and a new hexyl alcohol (abst.), - - - - - 12, 155
- FREW, W. See Carnelley, T.
- FREYTAG, B. Derivatives of propionic acid (abst.), - - - - - 2, 135
- FRIEDBURG, L. H. On bisulphide of carbon, 4, 252 : Manufacture of tartaric acid, 4, 292 : Active principle of rennet, so-called chymosin, 10, 98 : On Graftian's new fat extractor, 10, 162 : On Curtius' hydrazine, 10, 164 : On the formation of anthraquinone under peculiar conditions, 12, 26 : On the preparation of thiophen, 12, 83 : Notes on quantitative analysis, 12, 131 : Studies on resins, 12, 285, 392 : On the relative intensity of chemical force, 12, 292 : Action of nitrous anhydride upon organic compounds. New quinone oxime, 13, 111 : Notes on acid calcium tartrate, and on alkyl iodides, - - - - - 13, 144
- FRIEDBURG, L. H., and J. A. Mandel. On the action of nitrogen trioxide upon different organic compounds, - - - - - 12, 7, 54
- FRIEDEL, C. Experiments on the combustion of the diamond (abst.), 6, 36
- FRIEDEL, C., and M. Balsohn. Transformation of styrolene bromide into methyl benzoate (abst.), 2, 92 : Oxidation of ethylbenzene (abst.), 2, 92 : Action of bromine upon diphenylmethane (abst.), 2, 366 : Action of monobromdiphenylmethane on ammonia (abst.), 2, 436 : Synthesis of diphenylacetic acid (abst.), - - - - - 2, 436
- FRIEDEL, C., and J. M. Crafts. Direct combination of various metal groups with benzene and toluene (abst.), 1, 397 : Decompositions produced by action of aluminum chloride (abst.), 4, 170 : Action of methylene chloride on toluene and benzene (abst.), 6, 163 : Decomposing action of aluminum chloride on certain hydrocarbons (abst.), - - - - - 7, 142
- FRIEDHEIM, C. Separation of vanadic from tungstic acid (abst.), 12, 175
- FRIEDLÄNDER, P., and H. Ostermaier. Carbostyryl (abst.) - - - - - 4, 230
- FRIEDLANDER, T., and J. Mähly. Dinitrocinnamic acid (abst.), 5, 242
- FRIEDRICH, R. Decomposition of mono-halogen substituted crotonic acids by alkalies (abst.), - - - - - 4, 206
- FRIESE, G. See Bernthsen, A.
- FRITZSCHE, P. Oxyphenylacetic acid (abst.), 1, 294 : Oxyphenylacetic acid and its derivatives, - - - - - 2, 292
- FROHMAN, E. D. See Noyes, W. A.
- FROMMEL, J. See Clermont, P. de.
- FRÜHLING, R., and J. Schulz. Analyses of milk (abst.), - - - - - 9, 122
- FRUTIGER, G. New ureometer (abst.), - - - - - 8, 96
- FÜRBRINGER, P. Precipitation of albumin in acid urine (abst.), 1, 348
- FULTON, C. H. Assay of telluride ores, - - - - - 20, 586
- GABBA, L., and O. Textor. Influence of composition of water in production of raw silk (abst.), - - - - - 1, 159
- GABRIEL, S. Benzylidenephthalide and *iso*-benzalphthalide (abst.), 9, 210
- GABRIEL, S., and A. Deutsch. Diphenyl derivatives containing sulphur (abst.), - - - - - 2, 370

- GABRIEL, S., and H. Hendess. Benzyl derivatives (abst.), - 9, 211
- GABRIEL, S., and P. Heymann. Anhydro-bases from amidomercaptans of the fatty series (abst.), - - - - 12, 158
- GABRIEL, S., and W. E. Lauer. On propylamine (abst.), - 12, 158
- GAL, H., and A. Étard. Researches upon strychnine (abst.), - 1, 273
- GALBRAITH, W. Claim of priority (abst.), - - - - 1, 325
- GALIEWSKY, P. Action of ammonia on di- and tri- halogen substitution products of hydrocarbons (abst.), - - - - 12, 228
- GANTTER, F. Determination of solids and fat in milk and butter (abst.), - - - - - 10, 27
- GANTTER, F., and C. Hell. Bromo-substitution products of suberic acid (abst.), 4, 204: Pimelic acid, an oxidation product of castor oil (abst.), - - - - - 8, 110
- GAROLA, C. V. Contributions to study of oil cakes used in feeding 15, 656
- GARRIGUES, W. E. The Gunning method for total nitrogen in fertilizers, 16, 795: Determination of melting-points and composition of some candle material, 16, 825: Determination of potash in manures, 17, 47: Analysis of bearing-metal alloys, with a new volumetric method for determining copper, 19, 934: Determination of lead in alloys, - - - - - 20, 508
- CARTENMEISTER, R. Boiling-points and specific volumes of ethereal salts of fatty acids (abst.), - - - - - 8, 228
- GARZAROLLI-THURNLACKH, K., and G. Schacherl. Chlorine monoxide (abst.), - - - - - 7, 244
- GASIOROWSKI, K., and V. Merz. Nitriles from formanilide (abst.), 8, 74
- GASIOROWSKI, K., and A. F. Wayss. On the diazo-compounds (abst.), - - - - - 7, 228
- GASKELL, H., and F. Hurter. Preparation of sodium bicarbonate (abst.), - - - - - 6, 173
- GASPARIN, P. DE. Dissemination, accumulation, and determination of phosphoric acid in soils (abst.), - - - - - 6, 137
- GATTERMANN, L. Modification of Schiff's apparatus for the volumetric determination of nitrogen (abst.), 7, 92: Researches on diazo-compounds (abst.), - - - - - 12, 232
- GATTERMANN, L., R. Ehrhardt, and H. Maisch. Friedel-Crafts' synthesis of ketones from phenolethers (abst.), - - - - 12, 227
- GATTERMANN, L., and W. Hausknecht. Spontaneously inflammable hydrogen phosphide (abst.), - - - - - 12, 224
- GATTERMANN, L., and A. Rossolymo. Modification of the urea chloride synthesis (abst.), - - - - - 12, 229
- GAUTIER, A. Chlorophyll (abst.), 2, 90: Observations on Vincent and Delachanal's paper on methyl cyanide (abst.), 2, 433: Isomers of phloroglucin (abst.), 2, 436: Insoluble modification of pepsin (abst.), 4, 237: On bacterian and physiological alkaloids, ptomaines, and leucomaines (abst.), - - - - 9, 114
- GAUTIER, H. Direct chlorination of methylbenzoyl (abst.), 8, 167: Action of chlorine on anhydrous chloral (abst.), 8, 36: See also Colson, A.

- GAWALOVSKI, A. Scheibler's calcimeter as an azotometer (abst.),  
 1, 375 : Comparative value of different filter-papers (abst.), 1, 376 :  
 An indicator of neutrality in acidimetry and alkalimetry (abst.),  
 5, 245 : Reagent bottles (abst.), 7, 173 : Soap analysis (abst.),  
 7, 179 : Bottles for reagents sensitive to light (abst.), - - 7, 209
- GAYON, U. Inactive glucose, or neutral sugar (abst.), - - 2, 364
- GAYON, U., and G. Dupetit. Fermentation of nitrates (abst.), - 5, 117
- GEHRING, G. Butyl mono- and di-chloracetates (abst.), - - 8, 180
- GEISLER, H. Determination of water in milk (abst.), - - 1, 358
- GEISLER, J. F. New condenser attachment, 10, 63 : Notes on the  
 morphimetric assay of opium, 10, 143 : The relative merits of the  
 Wanklyn and the Adams methods for determination of fat in milk  
 analysis, 12, 488 : Signification of lactometer tests, 13, 93 : Milk  
 analyses, 13, 120 : Analysis of a Pekoe Ceylon tea, 13, 237 : Detec-  
 tion of a yellow azo dye used for the artificial coloring of fats, 20, 110
- GEIZER, C. Derivatives of *p*-amido-*iso*-butyl benzene (abst.), - 10, 19
- GENTH, F. A. Examination of North Carolina uranium minerals  
 (abst.), - - - - - 1, 281
- GENTH, F. A., JR. On several Spanish minerals (abst.), - - 2, 43
- GEORGES, [M]. Detection of peptones in blood and urine (abst.), 8, 231
- GERBER, M. See Rosenstiehl, A.
- GERBER, N. Addition of goat's milk to cow's milk (abst.), - 8, 233
- GERLACH, G. T. Boiling-points of solutions of salts, etc. (abst.),  
 9, 109 : Specific gravity tables (abst.), - - - 10, 159
- GERICHTEN, E. VON. Constitution of phthalylchloride (abst.), - 2, 371
- GERMAN, L. See Fischer, O.
- GERRESHEIM, H. Contributions to knowledge of ammoniacal mer-  
 cury compounds (abst.), - - - - - 1, 259
- GEYER, W. E. See Morton, H.
- GIACOSA, P. Preparation of phenolglycollic acid etc. (abst.), - 4, 496
- GIACOSA, P. Determination of phenol (abst.), 4, 196 : See also  
 Nencki, M.
- GIBBS, W. Complex inorganic acids (abst.), 1, 111 : Researches on  
 the complex inorganic acids (abst.), - - - - 1, 482
- GIEBERMANN, R. See Riggs, W.
- GILBERT, J. H. See Lawes, Sir J. B.
- GILCHRIST, P. S. Improvements in manufacture of sulphuric acid,  
 - - - - - 15, 624 ; 16, 498
- GILES, W. W., and A. Shearer. Estimation of sulphurous acid (abst.), 6, 194
- GILL, A. C. See Dennis, L. M.
- GILL, A. H. Determination of nitrates in potable water, 16, 122, 193 :  
 Modification of Hinman's explosion pipette, 17, 771 : Improved  
 gas pipette for the absorption of illuminants, - - - 18, 67
- GILL, A. H., and S. P. Hunt. Determination of methane and hydro-  
 gen by explosion, - - - - - 17, 986
- GILL, A. H., and H. A. Richardson. Determination of nitrites in  
 potable water, - - - - - 18, 21

- GIMMINGHAM, C. H. Contributions to the development of the Sprengel air-pump (abst.), - - - - - 6, 97
- GINTL, W. F. Analysis of water of spring at Marienbad, Bohemia (abst.), - - - - - 2, 135
- GIRARD, A. Transformation of hydrocellulose into friable pyroxylin (abst.), 1, 400 : Determination of astringent substances in wine (abst.), 4, 242 : Determination of starch in the potato (abst.), 10, 87
- GIRARD, A. DE. See Engel, R.
- GIRARD, C. Action of barium hydroxide on some aniline compounds (abst.), 1, 397 : Detection of aniline colors in wine (abst.), 1, 576 : Preparation of pure levulose (abst.), - - - - - 2, 133
- GIRARD, C., and L. L'Hôte. Aniline dichromate (abst.), - - - - - 9, 173.
- GIRARD, C. See also Caventou, E.
- GIRARD, J. DE. Combinations of hydrogen phosphide with chloral hydrate (abst.), - - - - - 8, 199
- GIRAUD, H. Volumetric separation of tin and antimony (abst.), 8, 200 : A physical property of  $\alpha$ -triphenylguanidine (abst.), 8, 203
- GIRD, W. K. A gravimeter for sugar analysis, - - - - - 16, 677
- GLADDING, T. S. Determination of reverted phosphates, 4, 113 : Estimation of phosphoric acid as magnesian pyrophosphate, 4, 135 : Modification of apparatus for determination of nitrogen (abst.), 4, 160 : Determination of rosin in fats (abst.), 4, 192 : On the reversion of phosphoric acid (abst.), 6, 168 : Estimation of potash, 8, 12 : Estimation of sulphur in pyrites, 16, 398 : Determination of sulphur in pyrites ; a reply, 17, 397 : Gravimetric method of estimating phosphoric acid as ammonium phosphomolybdate, 18, 23 : Microscopic detection of beef fat in lard, 18, 189 : Estimation of sulphur in pyrites, 18, 446 : Determination of iron oxide and alumina in phosphoric rock, etc., 18, 717 : New method for the estimation of iron oxide and alumina in phosphate rock, 18, 721 : Boric acid determination, 20, 288 : See also Stillwell, C. M.
- GLADSTONE, J. H., and A. Tribe. Aluminum alcohols, products of their decomposition by heat (abst.), 4, 142 : Action of light and heat on cane and invert sugars (abst.), 5, 232 : Hydroxylamine (abst.), 5, 232 : Recovery of iodine from organic iodide residues (abst.), 5, 232 : On tests for alcohol (abst.), 5, 233 : Residual phenomenon of the electrolysis of sulphuric acid (abst.), 5, 232 : Reaction of the copper zinc couple on nitric oxide (abst.), 5, 233 : Reducing action of spongy lead (abst.), - - - - - 5, 233
- GLASER, C. Determination of phosphoric acid (abst.), 7, 178 : Determination of reverted phosphoric acid, etc. (abst.), 7, 179 : Remarks on Mohr's article on the determination of reverted phosphoric acid (abst.), 7, 179 : Estimation of thoria. Analysis of monazite sand, 18, 782 : Sodium peroxide in quantitative analysis, - - - - - 20, 130
- GLATZEL, E. Synthesis of iron pyrites (abst.), - - - - - 12, 155
- GLEICHMANN, L. Reaction of dimethylphenylphosphine on ethylene bromide (abst.), 4, 206 : See also Michaelis, A.

- GODÉFFROY, R. Atomic weight of caesium (abst.), - - - 1, 106
- GOES, B. Diphenyldiamidonaphthol (abst.), - - - 2, 170
- GOESSMANN, C. A. Contributions from the agricultural laboratory,  
P. 1, 2, 60: Contributions to the chemistry of the American grape  
vine, P. 2, 35: Recent experiments with sugar-cane in Louisiana,  
P. 2, 52: Experiments with sugar-beet roots, P. 2, 56: Examina-  
tion of Minnesota early amber cane, 1, 44: Experiments with fer-  
tilizers upon sugar-cane, 1, 416: Sugar in corn-stalks and melons,  
1, 420: Contributions to the chemistry of fruit culture, 1, 423:  
Analyses of intestinal concretions of horses, 1, 430: Examination  
of Eastern, Western, and Southern corn, - - - 2, 7
- GÖTSCHMANN, T. Methyl and dimethylidiacetoneamine (abst.), - 2, 175
- GÖTTIG, C. Compound of calcium chloride and normal propyl alcohol  
which moves on water (abst.), - - - - 12, 156
- GOTTSCH, H. See Dürkopf, E.
- GOLDBERG, A. Parahydroxysalicylic acid (abst.), 1, 495: See also  
Schmitt, R.
- GOLDSCHMIDT, H. Phosphorus pentasulphide (abst.), 4, 227: On  
nitrosophenols (abst.), - - - - 6, 287
- GOLDSCHMIDT, H., and A. Meissler. Constitution of tautomeric com-  
pounds (abst.), - - - - 12, 167
- GOLDSCHMIDT, H., and V. Meyer. Determination of density of gases  
(abst.), - - - - 4, 176
- GOLDSCHMIDT, H., and H. Schmid. On nitrosophenols (abst.), - 7, 230
- GOLDSMITH, L. See Mabery, C. F.
- GOLL, O. See Nietzki, R.
- GOMBERG, M. Action of Wagner's reagent upon caffeine and a new  
method for the estimation of caffeine, 18, 331: Perhalides of caf-  
feine, 18, 347: New form of potash bulb, 18, 941: Tetraphenyl-  
methane, 20, 773: Periodide of triphenylbrommethane, - 20, 790
- GOMBERG, M., and A. Campbell. Hydrazo- and azo-derivatives of  
triphenylmethane, - - - - 20, 780
- GOOCH, F. A. Determination of phosphoric acid as magnesium py-  
rophosphate (abst.), 1, 537: Method for separation and igni-  
tion of precipitates (abst.), 1, 582: New method for separation and  
treatment of precipitates (abst.), 2, 43: Method for estimation of  
phosphoric acid as magnesium pyrophosphate (abst.), - 2, 220
- GOOCH, F. A., and J. E. Whitfield. Analysis of waters of the  
Yellowstone National Park (abst.), - - - - 10, 188
- GORDIN, H. M., and A. B. Prescott. Atropine periodides and iodo-  
mercurates, - - - - 20, 329
- GORDIN, H. M. See also Prescott, A. B.
- GORE, G. Chemical action with carbon and its compounds (abst.), 6, 286
- GORGU, A. Basic salts of manganese (abst.), 4, 242: Silicated chlo-  
ride of manganese (abst.), 6, 76: Zinc ferrite. Artificial pro-  
duction of franklinite (abst.), - - - - 9, 100

- GOSSIN, E. Action of isobutyl chloride on benzene in the presence of aluminum chloride (abst.), - - - - 6, 192
- GOTTSCHALK, M. Action of nitric acid on pentamethylbenzene (abst.), - - - - 10, 37
- GOUSIOROWSKI, K. See also Gasiorowski, K.
- GOUSIOROWSKI, K., and V. Merz. Nitriles and carboxylic acids from aromatic amines (abst.), - - - - 6, 85
- GRABOWSKY, J. Galician ozokerite and ceresine, - - - P. 1, 121
- GRAEBE, C. Synthesis of anthraquinoline (abst.), - - - 6, 167, 234
- GRAEBE, C., and H. Caro. Acridine (abst.), - - - 2, 98
- GRAEBE, C. See also Brunck, H.
- GRANDEAU, H. Decomposition of aluminum phosphate at a high temperature (abst.), - - - - 5, 119
- GRANDVAL, A., and H. Lajoux. Rapid determination of nitric acid (abst.), - - - - 7, 293
- GRAVES, E. E. See Plimpton, R. T.
- GREEN, A. G., and S. Rideal. A volumetric method for the estimation of nitrous acid (abst.), - - - - 6, 170
- GREEN, A. G., C. F. Cross, and E. J. Bevan. New photographic process (abst.), - - - - 12, 476
- GREEN, A. G. See also Morley, H. F.
- GREEN, F. T. Device for the adjustment of a balance, - - - 16, 699
- GREEN, J. R. Composition of edible swallow's nest (abst.), - - 7, 289
- GRENE, W. H. Preparation of methylene chloride, etc., 1, 522 : Acetobenzonic anhydride (abst.), 2, 431 : Remarks on Dr. Doremus' apparatus for estimation of urea, - - - 7, 166
- GREGG, W. H. New specific gravity bottle, - - - - 3, 26
- GRIFF, P. Production of anthranilic acid from orthonitrotoluene (abst.), - - - - 2, 227
- GREINER, E. New automatic pipette, - - - - 16, 643
- GRESLY, J., and F. Meyer. Mesitylenephthaloylic acid (abst.) 5, 18
- GRETE, E. A. Behavior of nitric acid when heated with soda-lime (abst.), 1, 100 : Determination of nitrogen in horn, etc. (abst.), 1, 542
- GREUEL, G. Solubility of iodine in fatty oils (abst.), - - - 7, 202
- GREVILLE, H. L. New residual product from coal gas (abst.), - 6, 24
- GRIESS, P. Reaction for nitrous acid (abst.), 1, 105 : New class of ammonium compounds (abst.), 2, 224 : Action of cyanogen on picraminic acid (abst.), 4, 264 : Introduction of the azo-group, in the aromatic para-compounds (abst.), 7, 32 : Experiments on diazo-compounds (abst.), - - - - 8, 51
- GRIESSMAYER, V. Coloring-matter of wine, etc. (abst.), - - 1, 578
- GRIFFITHS, A. B. Chemical and microscopical researches on the cell-contents of certain plants (abst.), 5, 101 : Value of ferrous sulphate as a manure for certain crops (abst.), 6, 77 : Occurrence of a phenol in the stem and leaves of *Pinus sylvestris* (abst.), 6, 93 : Chlorophyll probably a compound of iron with one of the glucosides (abst.), 6, 238 : On a recent discovery of a

- paraffin shale deposit in Servia (abst.), 6, 244 : Application of iron sulphate in agriculture and its value as plant food (abst.), 7, 54
- GRIFFITHS, A. B., and E. C. Conrad. Estimations of the amount of salicylic acid in the pausay (abst.), - - - 6, 233
- GRIFFITH, A. B., and C. Platt. Composition of pelagine, - - - 17, 877
- GRIMAU, E. Synthesis of uric acid derivatives of the alloxan series (abst.), 1, 172, 275 : Pseudouric acid (abst.), 1, 389 : New derivative of the parabanic series (abst.), 1, 487 : Action of bromine on quinoline and pyridine (abst.), 4, 242 : Ferric ethylate and colloidal ferric hydroxide (abst.), 6, 92 : Nitrogenized colloid derived from amidobenzoic acid (abst.), 6, 135 : On glyceryl aldehyde (abst.), 9, 101 : On a fermentable carbohydrate (abst.), 10, 78 : On the *m*-pyrazolones of Pinner and Lifschutz (abst.), - - - 10, 82
- GRIMAU, E., and P. Adam. Action of bromine upon dichlorhydrin (abst.), 1, 486 : Action of bromine upon epichlorhydrin (abst.), 2, 364
- GRIMAU, E., and L. Lefèvre. Transformation of glucoses into dextrins (abst.), 8, 181 : On dioxethyl acetone (abst.), - - - 10, 188
- GRIMAU, E., and J. Tscherniac. Preparation of malonic acid (abst.), 1, 385
- GRITTNER, A., and J. Szilasi. Determination of rosin in soaps and fats (abst.), - - - - - 8, 205
- GROOT, J. DE. Determination of red coloring-matters in wine (abst.), 4, 191
- GROSJEAN, B. J. Determination of nitric nitrogen in guano (abst.), 1, 356 : Determination of tartaric acid in lees and argols (abst.), 1, 369
- GROSJEAN, B. J., and R. Warrington. Contributions to the chemistry of tartaric and citric acids (abst.), - - - - - 5, 231
- GROSSHEINTZ, H. Tetraallylammonium bromide and triallylamine (abst.), - - - - - 1, 387
- GROSSMANN, J. Determination of sulphites and thiosulphates (abst.), 1, 89
- GROSVENOR, W. M. New solvents for perchromic acid, - - - 17, 41
- GRÜNEBERG. Progress of Stassfurt industry (abst.), - - - 4, 75
- GRÜNEWALD, W. *o*-Thioxen and *o*-thiophendicarboxylic acid (abst.), 9, 193
- GRUBER, D. See Musculus, F.
- GUARESCHI, J. Oxidation of thialdine with nitric acid (abst.), - - - 1, 555
- GUDEMAN, E. A new method for the determination of vapor densities, 12, 399 : Peculiar reaction of Niagara river water, - - - 14, 221
- GUNSBERG, R. Simple form of colorimeter (abst.), - - - 1, 91
- GUNTHER, A., and B. Tollens. Fucose, from sea weed, an isomer of rhamnose (abst.), - - - - - 12, 476
- GUERIN, G. Determination of phosphoric acid in urine (abst.), 4, 197
- GUICHARD, [M.] Detection of Bordeaux-red in wines (abst.) - - - 4, 191
- GUIGNET, E. Extraction of the green material of leaves, etc. (abst.), 7, 141
- GUILLEMIN, G. Alloys of cobalt and copper (abst.), - - - 7, 285
- GUINOCHET, E. Aconitates (abst.), - - - - - 4, 231
- GULDBERG, C. M., and P. Waage. Chemical affinity (abst.), - - - 1, 295
- GUMPERT, F. Phenylcyanate (abst.), - - - - - 7, 174
- GUNNING, J. W. Possibility of fungoid growth in atmosphere free

- from oxygen (abst.), 2, 136: Modification of the Kjeldahl method (abst.), - - - - - 11, 54
- GUNTZ, [M]. Heat of formation of some fluorides (abst.), 6, 36: Heat of neutralization of bases with hydrofluoric acid (abst.), 6, 37: On the fluorides of sodium (abst.), 6, 74: Heat of formation of fluoride, chloride, and oxychlorides of antimony (abst.), 6, 157: See also Berthelot, M.
- GUSTAVSON, G. Reactions in presence of aluminum chloride and bromide (abst.), 2, 172: Aromatic bromine compounds from paraffin (abst.), - - - - - 6, 95
- GUTHRIE, F. B. On the solubility of certain salts in fused sodium nitrate (abst.), - - - - - 7, 53
- GUYARD, A. Note on the carminaphte of Laurent (abst.), 1, 272: Potassium biniodide (abst.), 1, 384: Action of oxalic acid on chlorates, bromates and iodates (abst.), 1, 384: Separation and determination of chlorine, bromine and iodine (abst.), 1, 384: Catalytic phenomena caused by viscosity (abst.), 1, 386: Copper ammonium oxyferrocyanide (abst.), 1, 388: Special law applicable to metallic ferrocyanides (abst.), 1, 388: Atomic weight of uradium (abst.), 1, 527: Researches on nitrogen iodide (abst.), 6, 34: Researches on the double iodide of copper and nitrogen (abst.), 6, 34: Note on furfuraldehyde (abst.), 6, 132: Synthesis of tartaric glucoside (abst.), 6, 132: Note on analysis of soils (abst.), 6, 168: Note on determination of ammoniacal nitrogen in soils (abst.), 6, 169: Note on separation and determination of lime (abst.), 6, 169: Action of air on solutions of tannin, etc. (abst.), - 6, 171
- GUYARD, A., (Hugo Tamm). Estimation of oxides of nitrogen as ammonia (abst.), - - - - - 4, 160
- GUYOT, P. On alunite (abst.), - - - - - 5, 117
- GUYOT, P., and R. Bidaux. Detection of coralline and fuchsine in wine (abst.), - - - - - 1, 576
- HAACKE, A. Kieselguhr and its technical application (abst.), - 6, 140
- HAAS, B. Determination of sulphurous acid in wines (abst.), - 4, 192, 205
- HAAS, H. See Hilger, A.
- HABERMANN, J. Glycyrrhizin (abst.), - - - - - 2, 180
- HADDOCK, A. G. Titration of sulphuric acid (abst.), - - - 1, 330
- HAGELBERG, L. Sulphocyanogen and selenocyanogen compounds (abst.), - - - - - 12, 231
- HAGEN, M. Lupanine from the seeds of *Lupinus angustifolius* (abst.), - - - - - 7, 247
- HAGER, H. Examination of mustard-oil (abst.), - - - - 8, 87
- HAHN, E. See Stadel, W.
- HAHN, H. C. Specific gravity of sodium chloride solutions, - 20, 621
- HAKE, C. N. Note on the Stassfurt potash industry (abst.), - 6, 24
- HAKE, H. W. See Dupré, A.
- HALBERSTADT, W. Vanadium trichloride from vanadium trisulphide (abst.), - - - - - 5, 50



- HALE, A. C. Ninth general meeting : announcements, - - 16, 573
- HALEY, E. J. Report on recent methods in fertilizer analysis, - 15, 217
- HALL, V. J. Simple fat extractor (note), - - - 19, 586
- HALLER, A. Carbonic ether of borneol (abst.), 4, 76 : Essential oil of savory (abst.), 4, 77 : Campholurethane (abst.), 4, 235 : Two stereoisomeric campholurethanes (abst.), 6, 163 : Action of alcoholic potash on urea, thiourea, and substituted ureas (abst.), 8, 166
- HALLOCK, A. P. Estimation of sulphuretted hydrogen in gas by direct weight, 4, 177 : Carl H. Schultz (obituary), - - 19, 676
- HALLOCK, E. J. Paranitro- and paramido-phenetol (abst.), - 1, 485
- HAMBURG, E. W. Determination of iron in organic substances (abst.), - - - - - 1, 347
- HAMBURGER, S. Injury done to vegetation by gases arising from certain manufacturing processes (abst.), - - - - 6, 198
- HAMILTON, C. C. See Bigelow, W. D.
- HAMMARSTEN, O. On the sulphur contained in casein and the determination of sulphur in proteid substances (abst.), - - 8, 60
- HAMNER, S. G. See Howe, J. L.
- HANCOCK, D. Preparation of standard iodine solutions, - - 16, 431
- HANDY, J. O. The exact determination of phosphorus by the molybdate method in iron, steel, and ores, which contain arsenic, 16, 231 : Barium hydroxide as an absorbent in carbon determinations in steel, 17, 247 : Aluminum analysis, - - - - 18, 766
- HANKÓ, W. Apparatus for determination of nitrogen by Dumas' method (abst.), - - - - - 1, 375
- HANNIN, F. See Rindell, A.
- HANRIOT, M. Constitution of epichlorhydrin (abst.), 2, 91 : Action of sodium on epichlorhydrin (abst.), 2, 91 : On strychnine (abst.), 6, 92 : Decomposition by heat of acids of the aliphatic series (abst.), - - - - - 8, 25
- HANTZSCH, A., and A. Werner. Stereochemistry in molecules containing nitrogen (abst.), - - - - - 12, 166
- HANTZSCH, A., and A. Zeckendorf. Derivatives of *p*-quinonedicarboxylic ester (abst.), - - - - - 9, 213
- HAPP, J. *p*-Quinolinesulphonic acid (abst.), - - - - 6, 236
- HARCOURT, A. V. New unit for photometric measurements (abst.), 1, 373
- HARDIN, M. B. Flame reactions of silver, P. 1, 2, 33 : Determination of calcium as carbonate after precipitation as oxalate, - P. 2, 126
- HARDIN, W. L. Atomic masses of silver, mercury, and cadmium by the electrolytic method, 18, 990 : Atomic mass of tungsten, - 19, 657
- HARDTUNG, E. See Post, J.
- HARDY, H. J. See Arnold, J. O.
- HARE, C. L. New table for qualitative separation of metals of iron group, - - - - - 17, 537
- HARNACK, E. Determinations of sulphur in ash-free albumin (abst.), 12, 176
- HAROLD, J. F. X. Derivatives of silicon tetrachloride, - - 20, 13
- HARRIS, E. P. New gas generator, - - - - - 17, 809

- HARRIS, H. B. Volumetric determination of cobalt, 20, 173 : See also Smith, E. F.
- HARRISON, J. B., and J. Williams. The proportions of chlorine and of nitrogen as nitric acid and as ammonia in certain tropical rain waters, - - - - - 19, 1
- HART, E. Nitrosulphobenzoic acid and some derivatives (abst.), 2, 44 : On condensation, especially on the condensation of nitric acid, 17, 576 : Points in the distillation of nitric acid, 17, 580 : Purification of glucinum salts, - - - - - 17, 604
- HART, P. On the concentration of sulphuric acid (abst.), - - - 6, 244
- HARTLEY, W. N. Researches on relation of molecular structure of carbon compounds to their absorption spectra (abst.), 4, 144 : Photographs of ultra-violet spectra (abst.), 4, 169 : Contributions to chemistry of cerium compounds (abst.), 4, 202 : Analysis of rhabdophane (abst.), 4, 202 : On the spectrum of beryllium and its relative position among the elements (abst.), 5, 115 : Homologous spectra (abst.), 5, 236 : Spectrum photography in relation to quantitative analysis (abst.), 6, 243 : Absorption spectra of the alkaloïds (abst.), - - - - - 6, 309
- HARTMAN, W. E. See Campbell, E. D.
- HARTMANN, A. Action of phosgene on *o*-diamines (abst.), - - 12, 228
- HARTMANN, A., and Schulze. Lanolin, - - - - - 8, 109
- HARTWIG, E. Wine oil (abst.), - - - - - 1, 296
- HARZ, C. O. Microscopic examination of well water (abst.), - 1, 367
- HASELT, A. VAN. Determination of boiling-points (abst.), - 1, 376
- HASTINGS, C. S. On Lockyer's hypothesis that the elements are compound (abst.), - - - - - 1, 113
- HAUSKNECHT, W. See Gattermann, L.
- HAUTEFEUILLE, P., and J. Chappuis. Composition and molecular weight of pernitric acid (abst.), 4, 237 : Liquefaction of ozone (abst.), - - - - - 4, 238
- HAUTEFEUILLE, P., and A. Perrey. Aluminum oxychlorides (abst.), 7, 284
- HAWLICZEK, J. See Lippmann, E.
- HAYCRAFT, J. B. Determination of urlic acid (abst.), - - - 8, 78
- HAYES-CAMPBELL, J. See Cushman, A. S.
- HAZARD, J. Estimation of quartz in rocks and clays (abst.), - 6, 239
- HAZEN, A. Measurement of colors of natural waters, - - - 18, 264
- HAZURA, K. See Bauer, A.
- HEATH, G. L. Estimation of sulphur in refined copper, 17, 814 : Cheap adjustable electrolytic stand, 18, 558 : Improvements in colorimetric tests for copper, 19, 24 : New calibrated weighing flask, 19, 198 : Study of methods for the estimation of sulphur in coal, - - - - - 20, 630
- HEATON, C. W. Zinc in drinking water (abst.), - - - - - 6, 77
- HECHT, O. See Iwig, F.
- HECKEL, E. Analysis of kola nuts (abst.), - - - - - 4, 234
- HEHNER, O. Pavy's method for determination of glucose (abst.),

- 1, 341 : Determination of phosphoric acid (abst.), 1, 538 : Analysis of milk (abst.), 4, 188 : Analysis and composition of bees-wax (abst.), 6, 170 : Estimation of glycerol in soaps, etc. (abst.), 10, 182 : Natural aperient bitter waters (abst.), - - - 10, 183
- HEHNER, O., and C. A. Mitchell. On the determination of stearic acid in fats, - - - - - 19, 32
- HEHNER, O., and H. D. Richmond. New method of folding filter-papers (abst.), - - - - - 9, 175
- HEIDENHAIN, H. Determination of organic matter by moist oxidation, 15, 71 : Determination of carbon dioxide by absorption, - 18, 1
- HEIM, R. See Weber, A.
- HEINRICH, [M]. Determination of dextrose and inverted sugar in presence of saccharose (abst.), - - - - - 1, 344
- HEINZELMAN, G., and L. Spiegelberg. Pentabrombenzenesulphonic acid (abst.), - - - - - 2, 186
- HELD, A. Note on ethyl- and methyl-acetylcyanate of ethyl (abst.), 6, 164
- HELL, C., and P. Schoop. Dibromcapric acid (abst.), - - - 1, 292
- HELL, C., and F. Urech. New combination of carbon with sulphur and bromine (abst.), 4, 226 : Action of bromine on carbon bisulphide (abst.), - - - - - 5, 26
- HELL, C. See also Gantter, F.
- HELLON, R. See Tacherniac, J.
- HEMBERT, F., and L. Henry. New process for producing hydrogen (abst.), - - - - - 8, 59
- HEMPER, W. Determination of hydrogen gas by absorption (abst.), 1, 371 : Fractional combustion of hydrogen in gaseous mixtures (abst.), 1, 372 : Limits to detection of carbon monoxide (abst.), 1, 556 : Gas furnace with arrangement for oxidation (abst.), 1, 585 : Determination of nitrous oxide (abst.), 4, 160 : Behavior of different forms of carbon towards iron at high temperatures (abst.), 8, 72 : Combustion under high pressure (abst.), - 12, 349
- HENDESS, H. See Gabriel, S.
- HENNINGER, A. Presence of glycol in wine (abst.), 4, 242 : Products of the reduction of erythrol by formic acid (abst.), - - - 6, 133
- HENRY, L. Monochlorallyl alcohol and its derivatives (abst.), 5, 119 :  
See also Hembert, F.
- HENZOLD, O. See Kreusler, U.
- HERMANN, R. Specific gravities and atomic volumes of the metals of the cerium group, etc. (abst.), - - - - - 1, 295
- HERRMANN, P., and B. Tollens. The sugar in *Symphoricarpus racemosa* (abst.), - - - - - 7, 208
- HERRMANN, P. See also Freund, M.
- HERROUN, E. F. Volumetric determination of antimony (abst.) - 4, 167
- HERTY, C. H. Mixed double halides of platinum and potassium, 18, 130
- HERTY, C. H., and T. R. Boggs. Study of the mixed halides and halothiocyanates of lead, - - - - - 19, 820
- HERTY, C. H., and J. G. Smith. Mercuric chlorothiocyanate, - 18, 906

- HERTZ, J. Volhard's method for determination of silver, etc. (abst.), 1, 535
- HERZFELD, A. Acetyl compounds of some carbohydrates, etc. (abst.), 2, 225
- HERZIG, J. Two new cyanuric acids (abst.), - - - 1, 289
- HESSE, F. Separation of nitroglycerol from nitrocellulose (abst.), - 1, 366
- HESS, F., and J. Schwab. Determination of nitrogen in nitroglycerol (abst.), - - - - - 1, 102
- HESS, W. See Bernthsen, A.
- HESSE, O. Dicinchonine (abst.), 7, 82: Benzoyl derivatives of aromatic amines (abst.), 7, 245: Cupreine and homoquinine (abst.), 7, 247
- HEUMANN, K. Reactions of silver ultramarine (abst.), 1, 163: Nomenclature of complex azo compounds (abst.), 5, 24: Burning of sulphur with white phosphorescent flame (abst.), - - 5, 65
- HEUMANN, K., and P. Köchlin. Sulphuryl chloride with non-metals and with tin (abst.), - - - - - 4, 261
- HEUMANN, K. See also Billitz, G.
- HEYMANN, P. See Gabriel, S.
- HIBBARD, P. L. Quick estimation of starch, - - - 17, 64
- HIBBS, J. G. Atomic weights of nitrogen and arsenic, - - 18, 1044
- HIBBS, J. G., and E. F. Smith. Action of metallic magnesium upon manganous salts, - - - - - 16, 822
- HIBBS, J. G. See also Smith, E. F.
- HIGGIN, A. Dibenzoylaniline and its isomers (abst.), 4, 171: See also Cross, C. F.
- HILDITCH, T. Determination of the atomic weight of oxygen (abst.), 6, 48
- HILFAHRT, H. Modification of Kjeldahl's method (abst.), - 7, 291
- HILGARD, E. W. The chemical and physical investigation of soils, - 16, 34
- HILGER, A. Detection of ethyldiacetic acid in urine (abst.), 1, 254: Solanine and its decomposition products (abst.), 1, 255: Properties of coloring-matter of red wine, etc. (abst.), - - 1, 578
- HILGER, A., and H. Haas. Separation and determination of tin and titanium (abst.), - - - - - 12, 175
- HILL, J. W. Hygiene of water, - - - - - 19, (18)
- HILLEBRAND, W. F. Occurrence of barium and strontium in silicate rocks, 16, 81: Estimation of small amounts of barium and strontium in silicate analysis, 16, 83: Plea for greater completeness in rock analysis, 16, 90: Warning against use of fluoriferous hydrogen peroxide in estimating titanium, 17, 718: Colorimetric estimation of small amounts of chromium, 20, 454, (49): Volumetric estimation of vanadium in presence of small amounts of chromium, 20, 461, (65): See also Noyes, W. A.
- HIMLY, C. Testing water for bacteria (abst.), - - - 1, 103
- HINDS, J. I. D. Improved ureometer, 15, 650: Hydrogen sulphide generator, 17, 420: Photometric method for the quantitative determination of lime and sulphuric acid, - - - 18, 661
- HINE, S. K. See Mason, W. P.
- HINSBERG, O. Quinoxaline (abst.), - - - - - 6, 308
- HINTZ, E. See Fresenius, R.

- HIRSCHLER, A. Influence of carbohydrates and fatty bodies on the putrefaction of albumin (abst.), - - - - - 8, 230
- HITCHCOCK, Fanny R. M. Tungstates and molybdates of the rare earths, 17, 483, 520: Reduction of metallic oxides at high temperatures, - - - - - 20, 232
- HJELT, E. On caprolactone (abst.), 4, 270: Action of water on isodibromcaproic acid (abst.), 4, 270: Oxypropylmalonic acid and its lactone (abst.), 4, 270: Action of bromine on allylmalonic acid (abst.), 4, 271: On dilactones (abst.), 4, 271: Action of hydrobromic acid and bromine on diallylacetic acid (abst.), 4, 271: On the boiling-points of lactones (abst.), 4, 271: On the formation of lactones (abst.), 4, 271: Allylsuccinic acid and a carbocaprolactonic acid (abst.), - - - - - 5, 69
- HOCHSTETTER, H. W. Preparation of sodium benzenesulphonate, 20, 549: See also Hoffmann, L. W.
- HODGKIN, J. See Howard, D.
- HODGKINSON, W. R., and F. E. Matthews. On some derivatives of fluorine (abst.), - - - - - 5, 99
- HODGSON, E. H. Determination of sulphur in asphalt, - - - - - 20, 882, (64)
- HÖLZ, O. See Roll, G.
- HÖNIG, M., and M. Rosenfeld. Contributions to the knowledge of certain sugars (abst.), - - - - - 1, 162
- HOERMANN, J. VON. Action of hydrocyanic acid on epichlorhydrin (abst.), 1, 160: See also Liebermann, C.
- HOFFMANN, E. Test for phenol (abst.), - - - - - 1, 546
- HOFFMANN, L., and W. Königs. Tetrahydroquinoline (abst.), - - - - - 5, 241
- HOFFMANN, L. W., and R. W. Hochstetter. New form of water-oven and still, - - - - - 17, 122
- HOFFMANN, A. W. Aromatic bases isomeric with mustard oil and other sulphocyanides (abst.), 2, 93: Action of bromine in alkaline solutions on the amides (abst.), 5, 21: Preparation of the amides of monobasic acids of the fatty series (abst.), 5, 25: Preparation of mustard oils (abst.), 5, 26: On conhydrine (abst.), 5, 53: Action of bromine in alkaline solution on amines (abst.), 5, 129: Observations on piperidine and pyridine (abst.), 5, 131: Letter from, - - - - - 6, 209
- HOGG, T. W. Influence of sulphur on Eggertz's carbon color test (abst.), 10, 115: New mixture for separating carbon from pig iron, steel, etc. (abst.), - - - - - 10, 156
- HOHNHAUSEN, J. VON. Separation of benzene, toluene, and xylene from crude tar, naphtha, etc. (abst.), - - - - - 6, 101
- HOLLY, H. A. See Cameron, F. K.
- HOLZNER, G. Determination of alcohol in fermented liquors (abst.), 1, 573
- HONIGMANN, M. Improvement in Solvay process (abst.), - - - - - 4, 74
- HOOD, J. On the estimation of iron by permanganate in the presence of hydrochloric acid (abst.), - - - - - 6, 312
- HOOD, J. J., and A. G. Salamon. Desulphurizing coal gas (abst.), 9, 223
- HOOGWERFF, S., and W. A. van Dorp. Oxidation of quinine by

- means of potassium permanganate (abst.), 1, 80, 169 : Pyridinecarboxylic acids (abst.) 2, 96 : Pyridinetricarboxylic acid from alkaloids of quinine group (abst.), - - - - 2, 172
- HOOKE, S. C. See Bamberger, R., and Japp, F. R.
- HOOPER, D. Gymnemic acid (abst.), - - - - 10, 191
- HOPKINS, C. G. Safety distillation tube for rapid work in nitrogen determinations, 18, 227 : The oil of corn, 20, 948 : Some errors in the determination of nitrogen, 20, 961 : Condenser for extraction work, - - - - 20, 965
- HOPKINS, N. M. Electric furnaces for the 110-volt circuit, - 20, 769
- HORBACZEWSKI, J., and F. Kanera. Influence of glycerol and fat on secretion of uric acid in man (abst.), - - - - 8, 185
- HORNBERGER, R. Determination of alkalis in ashes of plants (abst.), 1, 357
- HORNE, W. D. Automatic extractor, 15, 270 : Rapid and accurate analysis of bone-black, 17, 51 : Decarbonization of bone-black - 17, 503
- HORSIN-DÉON, P. Neutral sugar and inverted sugar (abst.), 1, 488 : Palm sugar from Calcutta (abst.), 1, 488 : Neutral sugar and inverted sugar (abst.), - - - - 2, 364
- HORSTMANN, A. Relative affinity of oxygen for hydrogen and carbon monoxide (abst.), - - - - 1, 164
- HORTON, H. E. Fermentation of glucose syrups, 16, 808 : Alkali and sulphurous acid processes used in the manufacture of starch, 17, 68 : Use of sulphurous acid in manufacture of glucose syrup and grape-sugar, 17, 281 : Acidity of glucose syrup and grape-sugar, 17, 402 : Ash in glucose syrup and grape-sugar - - - - 17, 403
- HORTON, W. A. See Austen, P. T.
- HOSÄUS, H. Pentaglycerol, 15, 707 : Lactone from pyrotartaric acid and formaldehyde, 15, 707 : See also Tollens, B.
- HOUGH, G. J. A new electrolytic stand, 20, 268 : Aluminum used as an electrode, - - - - 20, 302
- HOUSSEAU, A. New form of dropping glass (abst.), - - - 1, 379
- HOWARD, C. D. Exact dilution of liquid reagents by formula (note), 19, 587
- HOWARD, D., and J. Hodgkin. New alkaloid from cinchona bark (abst.), - - - - 4, 168
- HOWE, J. L. Ruthenium and its nitrosochlorides, 16, 388 : Contributions to the knowledge of ruthenocyanides, - - - 18, 981
- HOWE, J. L., and H. D. Campbell. New ruthenocyanides and the double ferrocyanide of barium and potassium, - - - 20, 29
- HOWE, J. L., and S. G. Hamner. Color of sulphur vapor, - 20, 757
- HOWE, J. L., and P. S. Mertins. Reinsch's test for arsenic and antimony, - - - - 18, 953
- HOWE, J. L., and E. A. O'Neal. Formation of alums by electrolysis, 20, 759
- HÜBNER, H. Nitrosalicylic acids, and isomerisms of benzene derivatives (abst.), - - - - 1, 233
- HÜFNER, G. Contributions to the chemistry of bile (abst.), 1, 493 : New form of spectrophotometer (abst.), - - - - 1, 583
- HUGOUNENQ, L. Amyl monochloracetate (abst.), 8, 74 : Presence of

- levorotary  $\beta$ -oxybutyric acid in the blood of a diabetic patient (abst.), - - - - - 9, 113
- HUGOUNENQ, L., and J. Morel. A new double carbonate of potassium and sodium (abst.), - - - - - 10, 77
- HUMMEL, J. J., and A. G. Perkin. New compounds of hæmatein and brazilein (abst.), - - - - - 4, 260
- HUMPIDGE, T. S. On the atomic weight of glucinum (abst.), - 7, 113
- HUNT, C. Gaseous fuel applied to the heating of gas retorts (abst.), 6, 105
- HURTER, F. Determination of cyanogen in soda lyes (abst.), 1, 108 :  
An attempt to utilize waste heat by Perkin's pipes (abst.), 6, 106 :  
See also Gaskell, H.
- HURTY, J. N. On the determination of crude fiber in cereals - 19, (39)
- HUTCHINSON, C. C. Disposal of sewage sludge (abst.), - - - 6, 103
- HYDE, F. S. Scheme for identification of acetanilide, phenacetine, quinine sulphate, etc., 17, 933 : Preparation of sodium nitroprusside, 19, 23 : Modification of the thalleoquin test for quinine, 19, 331
- IHL, A. Preparation of axle grease (abst.), - - - - - 8, 26
- ILES, M. W. Oxidation of xylenesulphonic acids, P. 2, 15: Blow-pipe experiments upon chloride, bromide, and iodide of silver, P. 2, 74:  
See also Remsen, I.
- ILOSVAY, L. Nitrous acid in the atmosphere (abst.), 12, 69 : See also Berthelot, M.
- IRVINE, R. Action of bleaching agents upon ink (abst.), - - - 9, 224
- IRVING, A. Ancient mortars (abst.), - - - - - 10, 158
- ISAMBERT, F. Phenomena of dissociation (abst.), - - - - 6, 75
- ISBERT, A., and J. Stutzer. Determination of phosphoric acid (abst.), 9, 218
- ISTEL, E. See Claus, A.
- IWIG, F., and O. Hecht. Products of the dry distillation of some silver salts of fatty acids (abst.), - - - - - 8, 64
- JACKSON, C. L. Researches on the substituted benzyl compounds (abst.), - - - - - 1, 282
- JACKSON, H. Action of sulphuric acid upon potassium iodide (abst.), 5, 232 : On the determination of hardness in waters (abst.), 6, 170
- JACKSON, O. R. See Baeyer, A.
- JACOB, J. C. Review of the Knop-Hufner method for the determination of urea (abst.), - - - - - 7, 292
- JACOBSEN, E., and P. Julius. Condensation products of cinnamic acid and gallic acid (abst.), - - - - - 9, 196
- JACOBSEN, O. Fusion of potassium mesitylenesulphonate with potassium hydroxide (abst.), 1, 252 : 1,2,4-*O*-Xylidine (abst.), 6, 162 : Nitro-*o*-toluic acid (abst.), 6, 163 : Action of sulphuric acid on bromodurene (abst.), - - - - - 9, 215
- JACOBSEN, O., and R. Neumeister. Bromchloral, chlorbromal, bromochloroform and chlorobromoform (abst.), - - - - - 4, 269
- JACQUELAIN, V. A. Pure carbon for electric light (abst.), - - 4, 235
- JACQUEMART. Reagent for detection of alcohol (abst.), - - - 1, 339
- JACQUEMIN, G. Preparation of cyanogen in the wet way (abst.), 7, 172

- JAFFE, S. H. Detection of salicylic acid in foods (abst.), - 8, 278  
 JAHN, H. Action of phosphonium iodide on bisulphide of carbon (abst.), 2, 171 : Vapor density of bromine (abst.), - 5, 26  
 JAHNS, E. Occurrence of carvacrol in the essential oil of *Satureia hortensis* (abst.), 5, 24 : Trigonelline (abst.), - 9, 215  
 JAILLARD, P. Detection of adulterations in oil of geranium (abst.), 1, 105  
 JAKSCH, R. VON. Occurrence of volatile fatty acids in urine (abst.), 8, 86  
 JAMES, J. W. Ethylene chlorobromide and some of its derivatives (abst.), - - - - - 5, 93  
 JAMES, W. Ethylene chlorosulphocyanide and  $\beta$ -chloroethylsulphonic acid (abst.), - - - - - 2, 134  
 JANNETTAZ, E. Note on the observations of Spring (abst.), 6, 38 : Note on development of schistocity in compressed bodies (abst.), 6, 38  
 JANOVSKY, J. V. Niobite of the Iser mountains (abst.), 2, 171 : On the direct substitution products of azobenzene (abst.), - 5, 54  
 JAPP, F. R.  $\alpha$ - and  $\beta$ -phenanthrenecarboxylic acids, and on the constitution of phenanthrene (abst.), 2, 347 : Constitution of lophine (abst.), 5, 91 : Condensations of compounds which contain the dicarbonyl group with aldehydes and ammonia (abst.), - 5, 101  
 JAPP, F. R., and S. C. Hooker. Action of aldehydes and ammonia on benzil (abst.), - - - - - 7, 31  
 JAPP, F. R., and H. H. Robinson. Constitution of amarine and lophine (abst.), - - - - - 4, 225  
 JAPP, F. R., and F. W. Streatfield. Action of aldehydes on phenanthraquinone in presence of ammonia (abst.), 4, 198 : Action of acetone on phenanthraquinone, etc. (abst.), 4, 221 : Condensation product of phenanthraquinone with ethyl acetoacetate (abst.), 5, 92 : Application of aldehyde and ammonia reaction in determining constitution of quinones (abst.), - - - - - 5, 199  
 JAWWIN, L. Hexylenes from tertiary hexyl alcohols (abst.), 1, 251 : See also Beilstein, F.  
 JAY, [M]. Influence of sugar on the determination of urea in urine (abst.), - - - - - 2, 132  
 JAY, R. See Curtius, T.  
 JEAN, F. Determination of tannic and oenogallic acid in wine (abst.), 4, 191, 233 : Clarification of champagne wines (abst.), 4, 234 : Determination of tannic acid (abst.), - - - - - 7, 249  
 JENKINS, E. H. See Johnson, S. W.  
 JEWETT, F. F. Arrangement for washing precipitates with boiling water - - - - - 17, 517  
 JEWETT, J. Influence of acetic acid on separation of iron, etc. (abst.), 1, 484  
 JOANNIS, A. Heat of formation of hydroferricyanic acid (abst.), 4, 231 : Hydroferrocyanic acid (abst.), 4, 231 : Hydroferricyanic acid (abst.), 4, 232 : Heat of formation of hydroferricyanic acid and of some ferricyanides (abst.), 4, 233 : Heat of formation of sulphocyanic acid and some sulphocyanates (abst.), - - - - - 4, 234  
 JÖRGENSEN, S. M. Bromopurpureocobalt salts (abst.), 1, 295 : Con-



- tributions to chemistry of chrom-ammonium compounds (abst.), 2, 290
- JOHANSON, E. Determinations of alkaloids in cinchona bark (abst.), 1, 552
- JOHNSON, E. S. Some apparatus for the technical analytical laboratory, - - - - - 19, 281
- JOHNSON, S. H. On the filtration of potable water (abst.), - - - - - 6, 140
- JOHNSON, S. W. Determination of nitrogen by combustion with calcium hydroxide (abst.), 6, 168 : The determination of phosphoric acid, 16, 462 : Composition of wood gum, - - - - - 18, 214
- JOHNSON, S. W., and E. H. Jenkins. Determination of nitrogen in analysis of agricultural products (abst.), 1, 281, 351 : On a method for the determination of phosphoric acid (abst.), 1, 281 : Rapid and exact method for determination of phosphoric acid (abst.), 1, 352
- JOHNSTONE, A. Detection of antimony in minerals (abst.), - - - - - 10, 173
- JOHNSTONE, W. Use of acetic acid in milk analysis (abst.), 8, 205 : Substitution of asbestos cloth for blotting-paper in milk analysis (abst.), 9, 175 : Does lead acetate precipitate hop bitters? (abst.), 9, 176
- JOLLES, A. Potassium manganate and its analytical importance (abst.), 9, 119 : Determination of bile constituents in urine (abst.), 12, 414 : New test for albumin (abst.), 12, 415 : Determination of albumin in bacterial urine (abst.), - - - - - 12, 415
- JOLY, A. Saturation of phosphoric acid by bases (abst.), 4, 232 : Preparation of arsenic acid (abst.), 7, 285 : Preparation of phosphoric acid (abst.), - - - - - 8, 70
- JONES, E. W. T. Specific gravity of fat at 100°, etc. (abst.), - - - - - 10, 157
- JONES, J. Determination of manganese in manganese bronze, - - - - - 15, 414
- JORDAN, F. See Frankland, P. F.
- JORISSEN, A. Test for nitrites in water (abst.), 4, 163 : Separation of small amount of cobalt from nickel (abst.), 4, 166 : Furfural in fermented liquids (abst.), 4, 268 : Detection of nitrates in potassium chlorate (abst.), - - - - - 9, 174
- JOWANOWITSCH, M. K. Decomposition of tartaric acid in the presence of glycerol at a high temperature (abst.), - - - - - 8, 110
- JÜPTNER, H. VON. Separation of gold and silver (abst.), 1, 99 : Wiburgh's gas-volumetric method for determination of carbon in iron and steel (abst.), - - - - - 10, 68
- JULIAN, F. Laboratory notes, - - - - - 15, 113
- JULIEN, A. A. Examination of carbon dioxide in the fluid cavities of a topaz, - - - - - 3, 41
- JULIUS, P. Behavior of silver chloride, bromide, and iodide, towards bromine and iodine (abst.), 5, 245 : See also Jacobsen, E.
- JUNGFLEISCH, E. Synthesis of optically active compounds (abst.), 6, 74 : On the decomposition of compounds optically inactive by compensation (abst.), - - - - - 6, 90
- JUNGFLEISCH, E., and E. Léger. Researches on the optical isomers of cinchonine (abst.), - - - - - 10, 80
- JUTZ, G. W. Monochlorocinnamic acid (abst.), - - - - - 5, 22
- KACHLER, J. Compounds of the camphor group (abst.), - - - - - 2, 179

OCT 5 1919

30\*

## INDEX OF AUTHORS.

- KADE, R. ~~Library~~ Action of chlorine on dibenzyl (abst.), - - - 1, 497
- KAHLER, M. Improved filter-disk, - - - 16, 58
- KAEMMER, G. Determination of tartaric acid in crude tartar, argols, etc. (abst.), - - - 7, 88
- KAHLENBERG, L. Speed of reduction of ferric chloride by stannous chloride, - - - 16, 314
- KALISCHER, S. Molecular structure of the metals (abst.), - 5, 21
- KALMANN, W. Standardizing iodine solutions (abst.), 8, 200 : See also Oser, J.
- KANERA, F. See Horbaczewski, J.
- KASSNER, G. Elementary analysis of volatile carbon compounds (abst.), - - - 9, 220
- KATHREINER, F. Determination of tannin (abst.), - - - 1, 102
- KAUFFMANN, G.  $\beta$ -naphtholaldehyde (abst.), - - - 5, 23
- KAWAKITA, M. See Divers, E.
- KAYSER, R. Estimation of tartaric acid in wine (abst.), - - 6, 97
- KEBLER, L. F. Acidimetric estimation of vegetable alkaloids, 17, 822 : Improvements on Dr. Squibb's volumetric method for estimating acetone, - - - 19, 316
- KEDZIE, R. C. Mineral residues in sprayed fruit, - - - 16, 71
- KEGEL, O. See Zincke, T.
- KEHRMANN, F. Substitution dependent on atomic and molecular magnitude, etc. (abst.), - - - 12, 167
- KEISER, E. H. See Remsen, I.
- KELBE, W. Expulsion of the sulpho group by bromine (abst.), - 4, 175
- KELBE, W., and J. Lwoff. Methyl alcohol obtained by dry distillation of colophony (abst.), - - - 5, 123
- KELBE, W., and C. Warth. Capronic acid occurring in resin oil (abst.), 4, 228
- KELLER, E. Distribution of the precious metals and impurities in copper and suggestions for a rational mode of sampling, 19, 243 : Notes on selenium and tellurium, 19, 771 : Tank residues in electrolytic copper refineries, - - - 19, 778
- KELLER, H. A. See Keller, H. F.
- KELLER, H. F. Symmetrical tetrabromdiacetyl (abst.), 12, 160 : The analysis of American refined copper, 16, 785 : Recent contributions to our knowledge of metallic reducing agents, - - 16, 833
- KELLER, H. F., and H. A. Keller. A new variety of kobellite, - 7, 194
- KELLEY, D. J. Malt wine, - - - 19, (30)
- KELLEY, J., and E. F. Smith. Action of acid vapors on metallic sulphides, - - - 18, 1096
- KENDALL, J. A. Method of obtaining benzene from coal gas (abst.), 6, 175
- KENT, W. H. A modified form of Soxhlet's extractor, 9, 182 : Determination of fat in milk, - - - 10, 32
- KENT, W. H., and B. Tollens. Examination of lactose and galactose (abst.), - - - 7, 85
- KERSHAW, J. B. C. Improved form of Orsat's apparatus for estimation of oxygen (abst.), - - - 6, 97

- KESSLER, F. Method of determining manganese in alloys of iron (abst.), 1, 83 : Atomic weight of antimony (abst.), - - 1, 320
- KESTNER. See Scheurer-Kestner.
- KIENLEN, P. Commercial analysis of bituminous rocks (abst.), 2, 432
- KILGORE, B. W. Estimation of phosphoric acid by titration of the yellow precipitate, 16, 765 : Determination of phosphoric acid by the molybdate-magnesia method, 16, 793 : Determination of phosphorus by molybdate-magnesia method, and by volumetric method, 17, 941 : Estimation of phosphoric acid by titration, etc., 17, 950 : Further communication on the volumetric estimation of phosphoric acid, - - - - 19, 703
- KILIANI, H. On gum arabic (abst.), 4, 174 : Preparation of lactic acid (abst.), 5, 20 : On saccharin (abst.), - - - 5, 20
- KILIANI, H., and S. Kleemann. Preliminary communication on caprolactone (abst.), - - - - 6, 162
- KINGZETT, C. T. Contributions to the history of putrefaction (abst.), 2, 343 : Camphoric peroxide and barium camphorate (abst.), 6, 91 : Comparative antiseptic values of chlorides, nitrates, and sulphates (abst.), 9, 190 : On the manufacture of chlorine, especially by the use of magnesia (abst.), - - - 10, 85
- KINNEAR, J. B. Reduction of nitrates and nitrites to ammonia in water analysis (abst.), - - - - 4, 163
- KINNICUTT, L. P. Indirect determination of chlorine and bromine (abst.), 4, 161 : Recent work in England on the purification of sewage, - - - - 20, 185
- KIRCHER, G. See Müller, C. L.
- KISCH, W. See König, J.
- KISSLING, R. Methods for determining nicotine in tobacco (abst.), 4, 195
- KJELDAHL, J. Determination of nitrogen in organic bodies (abst.), 5, 243
- KLASON, P. Apparatus for preparing chlorine (abst.), - 12, 155
- KLEEMANN, S. See Kiliani, H.
- KLEIN, D. Borotungstates (abst.), 2, 432 : Mucates and saccharates analogous to sodium antimonyl tartrate (abst.), 6, 35 : Tellurous anhydride and its combinations with acids (abst.), - 8, 163
- KLEIN, F. Determination of potassium acid tartrate in argol, etc. (abst.), - - - - 7, 295
- KLEIN, J. Constitution of desoxalic acid (abst.), 2, 291 : Use of ammonium thiocarbamate in analyses (abst.), - - - 9, 115
- KLEIN, L. Determination of carbon in cast iron (abst.), - - 1, 88
- KLEINERT, Dr. On the estimation of phenol in creosote oil (abst.), 6, 38
- KLEMP, G. Valuation of zinc dust (abst.), - - - 12, 503
- KLIEBHAN, G. Analysis of different varieties of coals (abst.), 9, 198 : Preparation of crystallized chromic acid from lead chromate (abst.), 9, 222
- KLINGER, A., and A. Bujard. Adulteration of split peas (abst.), - 9, 38
- KLOOZ, O. T. See Mabery, C. F.
- KLOPSCH, R. Determination of fat in oil cake (abst.), - 10, 157
- KNAPP, F. Ultramarine blue from silica by use of heat (abst.), - 7, 172

- KNECHT, E.** New isomer of orcinol (abst.), - - - 4, 227  
**KNÖFLER, O.** Volumetric determination of alkaline earths and sulphuric acid combined with them (abst.), - - - 7, 251  
**KNOENVAGEL, E.** Preparation of dry diazo-salts (abst.), - 12, 475  
**KNOP, A.** Action of phosphorus pentasulphide on aniline (abst.), 10, 40  
**KNOP, W.** Determination of potassium and sodium in silicates (abst.), 1, 536  
**KNORR, A. E.** Modified method of fine silver assay, 19, 814 : Some new forms of apparatus, - - - 19, 817  
**KNORR, L., and A. Blank.** Action of ethyl acetobenzalacetate on phenylhydrazine (abst.), - - - 8, 55  
**KNOX, J. W. T., and A. B. Prescott.** The caffeine compound in kola, 19, 63 : The caffeine compounds in kola. II. Kolatannin, 20, 34  
**KNYRIM, M.** See Zimmermann, J.  
**KOBÉ, K.** See Seubert, K.  
**KOCH, H.** See Fischer, E.  
**KÖBIG, J.** Constituents of oil of Roman camomile (abst.), - 1, 238  
**KÖCHLIN, P.** See Henmann, K.  
**KÖHLER, H.** Apparatus for determination of solubilities (abst.), 1, 375 : Components of essential oils of some *Ericaceae* (abst.), - 1, 395  
**KÖHNLEIN, B.** Preparation of paraffins (abst.), - 5, 130  
**KÖLLIKER, A.** See Wallach, O.  
**KÖNIG, F.** Preparation of succinic acid from tartaric acid by fermentation (abst.), - - - 4, 205  
**KÖNIG, J.** Determination of oxygen dissolved in water (abst.), 2, 172  
**KÖNIG, J., and W. Kisch.** Analysis of commercial peptones (abst.), 11, 55  
**KÖNIGS, W.** Oxidation products of cinchonine (abst.), 1, 166 : Action of phosphorus pentachloride, etc., on cinchonine chloride (abst.), 2, 227 : See also Hoffmann, L.  
**KÖRNER, G.** See Fischer, O.  
**KÖRNER, M.** See Weddige, A.  
**KORTSTORFER, J.** New method of testing butter for foreign fatty bodies (abst.), - - - 1, 359, 567  
**KOHN, O.** See Nölting, E.  
**KOLBE, H.** Composition and basicity of hyposulphuric acid (abst.), 1, 497 : Constitution of isatin (abst.), 7, 57, 173 : Preparation of anthranilic acid (abst.), - - - 7, 60  
**KONINCK, L. L. DE.** See De Koninck, L. L.  
**KONINGH, L. DE.** See De Koningh, L.  
**KOPP, H.** Acids obtained in saponification of oil of Roman camomile (abst.), - - - 1, 238  
**KOPPSCHAAAR, W. F.** Composition and analysis of commercial quinine sulphate (abst.), - - - 7, 226  
**KOSSEL, A.** New base found in the animal body (abst.), - 7, 175  
**KOSTANECKI, S. VON.** See Liebermann, C.  
**KOUZNETZOFF.** Analysis of rotschouberite (abst.), - 6, 78  
**KOWALEWSKY, N.** Uranium acetate as reagent for albuminoids (abst.), - - - 7, 291

- KRAEMER, G., and A. Spilker. Synthesis of chrysene and related hydrocarbons (abst.), 12, 160 : Cumarone of coal tar (abst.), 12, 162
- KRAMER, M. Determination of acetone in wood spirit (abst.), - 4, 196
- KRAATSCHEMER, F. Use of sodium bromate in volumetric analysis (abst.), 7, 296: Apparatus for determination of nitric acid (abst.), 9, 217
- KRAUSE, A. Paraphenylenediamine (abst.), 1, 162 : Note on the diamond (abst.), - - - - - 12, 472
- KRAUSE, H., and G. Salomon. Formation of xanthine bases from egg-albumin (abst.), - - - - - 1, 165
- KRAUSE, O. H. Joseph Goldmark, an obituary, - - - - - 4, 7
- KRAUT, K. Belladonnine (abst.), 2, 173 : On tropine (abst.), - 4, 264
- KRESSNER, M. G. See Dietzell, B. E.
- KREUSLER, U. Apparatus for reducing measured volumes of gas to normal conditions (abst.), 6, 97 : Digestion furnace for Kjeldahl nitrogen determinations (abst.), - - - - - 7, 291
- KREUSLER, U., and P. Henzold. Alkaline reaction of glass, a source of error in analysis (abst.), - - - - - 6, 97
- KRÜGER P. Derivatives of benzenylamidoxime (abst.), - - - 8, 75
- KRÜSS, G. Decomposition of nickel and cobalt (abst.), - 10, 180
- KRÜSS, G., and H. Moraht. Beryllium (abst.), 12, 154 : Researches on beryllium (abst.), - - - - - 12, 472
- KRÜSS, G., and K. Ohnmais. Vanadium sulpho salts (abst.), - 12, 472
- KRUG, W. H. Some characteristics of California wines, 16, 597 : Determination of tannin by metallic oxides, 17, 811 : Recalculation of Wein's table of starch equivalent to copper, - - - 19, 452
- KRUG, W. H., and J. E. Blomén. Commercial preparation of nitronaphthalenes, - - - - - 19, 532
- KRUG, W. H., and H. W. Wiley. Solubility of the pentosans in the reagents employed in the estimation of starch, - - - 20, 266
- KRUG, W. H. See Wiley, H. W.
- KRUTWIG, J. Detection of silver in metallic lead (abst.), 4, 168 : Separation of iodine and chlorine in the dry way (abst.), - - 7, 32
- KUBEL, W. Basic magnesium acetate (abst.), - - - - - 5, 19
- KUHN, B., and O. Saeger. Quantitative determination of arsenic by Marsh's test : action of potassium hydroxide on arsine (abst.), - - - - - 12, 353 ; 12, 477
- KUHARA, M. Method for estimating bismuth volumetrically (abst.), 2, 43
- KUHLMANN, E., Jr. Explosion of a platinum retort used for concentration of sulphuric acid (abst.), - - - - - 2, 130
- KUHN, O. Detection and estimation of arsenic, sulphur, phosphorus, and other elements, in native copper (abst.), - - - 6, 241
- KULISCH, P. Modification of the Kjeldahl method (abst.), - 8, 81
- KUPFERSCHLÄGER, I. On the existence of phosphoric acid in ammonium molybdate (abst.), 6, 98 : Purification of sulphuric acid (abst.), - - - - - 7, 244
- KURBATOFF, A. See Beilstein, F.

- KUTSCHEROFF, M. G. Action of hydrocarbons of the acetylene group on mercuric oxide and salts (abst.), 6, 93 : Action of allylene on mercuric oxide and salts (abst.), - - - - 6, 167
- KUZEL, H. See Fischer, E.
- LAAR, C. Contribution to the knowledge of sulphanilic acid (abst.), 2, 291 : Use of diphenylamine and aniline in qualitative analysis (abst.), - - - - 5, 52
- LA BELLONE, F. DE. Process for the medico-legal detection of blood (abst.), - - - - 10, 88
- LACHOWICZ, B. Action of phosphorus chlorides on phenanthra-quinone (abst.), - - - - 5, 69
- LA COSTE, W. Behavior of addition products of quinoline and manahaloid alkyl derivatives towards silver oxide (abst.), 4, 206 : Halogen derivatives of quinoline (abst.), 4, 268 : The bases produced from the products of addition of quinoline and halogenalkyls (abst.), - - - - 5, 23
- LA COSTE, W., and J. Bodewig. Methylformyl-*o*-amidochlorbenzoic acid and methyl-pseudo-chlorisatin from *m*-chlorquinolinemethylchloride (abst.), - - - - 7, 229
- LA COSTE, W., and F. Valeur.  $\beta$ -Quinolinedisulphonic acid (abst.), 10, 21
- LADD, E. F. Investigations upon maize, 12, 369 : The proteids of cream, 20, 858 : Humates and soil fertility, - - - - 20, 861
- LADENBURG, A. Artificial alkaloids (abst.), 2, 99 : Tropidine (abst.), 2, 225 : Hyoscyamine (abst.), 2, 225 : Duboisine (abst.), 2, 224 : Contributions to the history of atropine (abst.), 4, 176 : Behavior of diamines with nitrous acid (abst.), 6, 162 : Synthesis of piperidine (abst.), 6, 162 : On the synthesis of piperidine and its homologues (abst.), - - - - 7, 86
- LADENBURG, A., and G. Meyer. Upon daturine (abst.), - - - - 2, 370
- LADENBURG, A., and C. F. Roth. Studies on commercial picoline (abst.), - - - - 7, 146
- LADENBURG, A., and L. Rügheimer. Artificial formation of tropic acid (abst.), - - - - 2, 370
- LADUREAU, A. Phosphoric acid in soils of north of France (abst.), 4, 77
- LAFONT, J. Action of crystallizable formic acid on citrenol (abst.), 10, 113 : See also Bouchardat, G.
- LAIBLIN, R. Nicotine and nicotinic acid (abst.), - - - - 2, 55
- LAJOUX, H. On woman's milk (abst.), 9, 113 : See also Grandval, A.
- LAN, C. Effects of compression on hardness of steel (abst.), - - - - 4, 235
- LAND, W. J. Mica scale-pans, P. 1, 126 : Determination of carbonic acid by loss of weight, - - - - P. 1, 127
- LANDAUER, J. Spectra of salts of saffranine (abst.), - - - - 1, 374
- LANDIS, E. K. Determination of phosphorus (Note), 15, 480 : Indirect analysis of mixtures containing a common constituent, 17, 466 : Indirect analysis, 18, 182 : Standard iodine solution for sulphur determinations, - - - - 19, 261
- LANDOLPH, F. Action of boron fluoride on acetone (abst.), 1, 400 :

- Determination of fluorine and boron in organic compounds (abst.), 1, 543: Anethol derivatives (abst.), - - - 2, 171
- LANDOLT, H. Solid carbon dioxid (abst.), 6, 307: Some laboratory apparatus (abst.), 7, 150: Polaristrobometric analysis, - 11, 59, 80
- LANDSBERG, L. See Baeyer, A., and Erlenmeyer, E.
- LANE, N. J. Muter's method for analysis of fats and oils, 15, 110:  
Determination of sulphuric acid, - - - 18, 682
- LANGBECK, H. W. Bitter principle in fermented liquors brewed without hops (abst.), - - - 1, 363
- LANGENBECK, K. Chemistry of the pottery industry of the United States, - - - 15, 651, 695
- LANGLEY, J. W. Explanation of Gladstone and Tribe's " $\frac{2}{3}$  law in chemical dynamics" (abst.), 7, 26: Work of the committees on the "international standards for analysis of iron and steel," 15, 448: The use of electrolysis in technical chemical processes - 16, 49
- LANGWORTHY, C. F. A respiration calorimeter: abstract of description by Professors Atwater and Rosa, - - - 20, 681
- LAPRAIK, W. See Russell, W. H.
- LASNE and Benker. Reduction of loss of nitric acid in manufacture of sulphuric acid (abst.), - - - 4, 73
- LA SOURCE, M. DE. Influence of plaster of Paris on composition and chemical characters of wine (abst.), - - - 6, 104
- LATSCHINOFF, P. Isocholic acid (abst.), 5, 21: Empirical formula of cholic acid (abst.), - - - 10, 37
- LAUBENHEIMER, A. On orthodinitro compounds (abst.), - 4, 269
- LAUER, W. E. See Gabriel, S.
- LAUR, P. Reduction of silver ores by hydrogen in the wet way (abst.), - - - 4, 241
- LAURENT, L. Spectroscope of Thollon (abst.), - - - 1, 172
- LAWES, Sir J. B., J. H. Gilbert and R. Warington. On the chemistry of "fairy rings" (abst.), - - - 5, 102
- LAWLER, C. J. New aspirator, - - - 5, 71
- LAWSON, J. A. Action of diazo-compounds on  $\beta$ -naphthylamine (abst.), - - - 8, 22
- LAZARUS, M. J. On fractional distillation in a current of steam (abst.), - - - 7, 251
- LE BEL, J. A. Dextrogyric amyl alcohol (abst.), 1, 273: Active methylpropylcarbinol and various fungi which destroy it (abst.), 2, 132
- LE BON, G. Employment of powdered borax for preservation of meat (abst.), 1, 173: Two new antiseptics (abst.), - - - 4, 242
- LECHARTIER, G. Determination of phosphoric acid in soils (abst.), 6, 194
- LE CHATELLIER, H. Decomposition of cements by water (abst.), 6, 174: On the decomposition of salts by water (abst.), 7, 140: On the oxidation of silver (abst.), - - - 9, 169
- LECOQ DE BOISBAUDRAN, P. E. Atomic weight of palladium (abst.), 1, 320: Researches on samarium (abst.), 1, 401: Separation of gallium from iron and zinc (abst.), 4, 168: Separation of gallium

- (abst.), 4, 237, 238, 239, 240, 242, 273 : Crystallized oxychloride of gallium (abst.), 4, 233 : Separation of gallium (abst.), 5, 118 : Alloys of indium and gallium (abst.), - - - 7, 139
- LECRENIER, A. See Koninck, L. L. de, and Spring, W.
- LEE, C. T. Method for assay of indigo, - - - 6, 185
- LEEDS, A. R. Water analysis, P. 2, 1 : Determination of nitric acid by transformation into ammonia, P. 2, 9, 13 : Alkalinity or acidity of potable waters, P. 2, 71 : Presence of nitric acid in healthy urine, and accurate determination of, P. 2, 98 : Alteration of standard ammonium chloride solution when kept in the dark, P. 2, 147 : Titration of hydrochloric acid for chlorine, and of sulphuric and nitric acids for hyponitric acid, P. 2, 149 : Determination of nitrates, P. 2, 150 : Action of potassium permanganate upon oxalic acid, P. 2, 153 : Temperature and volume in generation of ozone, and new form of ozonator, 1, 8 : Titration of hydrochloric acid for chlorine, and of sulphuric and nitric acids for hyponitric acid, 1, 18 : Detection of traces of water in alcohol, 1, 38 : Influence of light upon the decomposition of iodides, 1, 65 : Detection and estimation of nitrous acid in potable waters, 1, 136 : Ammonium nitrite and by-products obtained in ozonization of air, 1, 145 : Solubility of ozone in water, 1, 220 : Action of ozone on coloring-matter of plants, 1, 228 : Bleaching of sugar syrups by ozone, 1, 229 : Reduction of carbon dioxide by phosphorus at ordinary temperatures, 1, 230 : Oxidation of carbon monoxide by air over phosphorus at ordinary temperatures, 1, 232 : Notes on ozone, 1, 431 : Peroxide of hydrogen and ozone, 2, 34, 247 : Action of light and darkness on standard ammonium chloride and tannin solutions, 2, 246 : Action of light on the soluble iodides, with the outlines of a new method of actinometry, 2, 249 : Laws governing the decomposition of equivalent solutions of the iodides under the influence of actinium, 2, 270 : Action of hyponitric anhydride on organic bodies, 2, 277, 416 : Production of ozone by heating substances containing oxygen, 2, 411 : Production of ozone, hydrogen peroxide and ammonium nitrate in ozonation of air by phosphorus, 3, 5 : Action of oxygen, ozone, and nascent oxygen upon benzene, 3, 16 : Direct conversion of aromatic amides into their corresponding azo-compounds, 3, 39 : Adulteration of food, drink, and drugs, from the chemist's standpoint, etc., 3, 60 : Relative purity of city waters in United States, 3, 98 : Compounds of aromatic bases with metallic salts, with a note on thiocarbanilide, 3, 134 : Reduction of metallic oxides in sunlight, 4, 3 : Diphenylamineacrolein, 4, 32 : Acrolein urea, 4, 58 : Contamination of the New York water supply, 4, 127 : Xylidine-acrolein, 5, 1 : Oenanthal-aniline, oenanthal-xylidine, and oenanthal-naphthylamine, 5, 2 : Solid residue from the distillation of castor oil *in vacuo*, 5, 4 : Cryptidine, 5, 7 : Acrolein-urea, with remarks upon Schiff's publications upon condensed ureas, 5, 36 : Analysis of soap, 5, 44 : Oenanthalaniline,



- oenanthalxylidine, and oenanthalnaphthylamine (abst.), 5, 66 :  
 Cryptidine (abst.), 5, 67 : Platinum iodide as a reagent for deleterious organic substances in potable waters, 5, 74 : Conversion of carbon monoxide to carbon dioxide by nascent oxygen, 5, 78 : Atomation of oxygen, 5, 205 : Benzureide, 6, 15 : Atomation of oxygen at elevated temperatures, and burning of pure hydrogen and hydrocarbons in pure air, 6, 17 : Estimation of organic-matter according to methods depending on reduction of permanganate (abst.), 6, 41 : Physical and chemical analysis of flour, 6, 56 : Composition and methods of analysis of human milk, 6, 252 : Present and proposed future water supply of the city of Albany, N. Y., 7, 261 : Water supply of Philadelphia, 8, 126 : Actinic method for the determination of organic matter in water, 8, 269 : Method of separation of coloring-matter in butter, etc., 9, 76, 98 : The pollution of the water supply of Jersey City and Newark, 9, 81 : The epidemic of typhoid fever at Mt. Holly, N. J., in 1887, 9, 146 : Determination of carbon and nitrogen in waters, 9, 162 : The aeration and composition of Niagara river water, 12, 449 : The composition of swill milk, 12, 451 : Chemical and physical changes attendant upon sterilization of milk, 13, 34 : Proteids of cow's milk, 13, 72 : Estimation by titration of carbon dioxide in water, 13, 98 : Precipitation of suspended clay by aluminic, ferric, and calcic hydroxides, 13, 100 : Are chemists prepared to abandon Clark's method for estimation of hardness in water, 13, 114 : Acetic acid in vinegar, 17, 741 : Standard prisms in water analysis, and the valuation of color in potable waters, 18, 484 : Bacteria in milk-sugar, - - - - - 18, 687  
 LEEDS, A. R., and E. Everhart. Action of water and of argentic hydrate upon benzene hexachloride and naphthalene tetrachloride, 2, 205 : Method for analysis of mustard, - - - 3, 130  
 LEFFÈVRE, L. See Grimaux, E.  
 LEFFMANN, H., and W. Beam. Effects of food preservatives on the action of diastase (abst.), - - - - - 10, 91  
 L'HOTE, L. Preparation of vanadyl chloride (abst.), 8, 71 : See also Girard, C.  
 LÉGER, E. See Jungfleisch, E.  
 LEHNE, A. Condensation of benzhydrol and naphthalene, - 2, 369  
 LELLMANN, E. Diphenylamine and paraditolylamine (abst.), 5, 24 : New class of amidines (abst.), 5, 24 : Naphthalene derivatives (abst.), 6, 87 : New toluylenediamine (abst.), 7, 174 : Constitution of the three dinitro-*p*-xylenes (abst.), 7, 175 : Methods for determining the constitution of aromatic diamines (abst.), - 7, 174  
 LELLMANN, E., and E. Würthner. New nitrotoluidine (abst.), 7, 175  
 LEMOINE, G. New sulphur salts from phosphorus trisulphide (abst.), 6, 76 : Hydrocarbons and higher alcohols obtained from American petroleum (abst.), 6, 95 : Reaction between ferric salts and oxalic acid (abst.), - - - - - 8, 198

- LENHER, V. Sulphiodide of lead, 17, 511 : Atomic mass and derivatives of selenium, - - - - - 20, 555
- LENHER, V., and E. F. Smith. Ammonium selenide, - - - - - 20, 277
- LENHER, V. See also Rising, W. B., and Smith, E. F.
- LENKEN, C. Discovery of cocaine (abst.), - - - - - 7, 88
- LENZ, W. Certain titrations with potassium permanganate (abst.), 7, 90 : Examination of indigo colors (abst.), - - - - - 9, 120
- LEONARD, N. Coloration of a coal fire by common salt (abst.), - - - - - 10, 179
- LEPPEL, F. VON. Universal stand for pocket spectroscope (abst.), 1, 379, 397 : Detection of juice of red beets and coloring-matter of red poppies, in wine (abst.), - - - - - 1, 578
- LEPINE, R., L. Eymonnet, and P. Aubert. The proportion of imperfectly oxidized phosphorus in urine (abst.), - - - - - 6, 129
- LEPLAY, H. Studies on the sugar beet (abst.), 5, 118, 119 : Studies on corn (abst.), - - - - - 5, 120
- LEPSIUS, B. Action of the arc light on gases (abst.), - - - - - 12, 351
- LERMONTOFF, J. Action of tertiary butyl iodide upon isobutylene in presence of metallic oxides (abst.), - - - - - 2, 54
- LE ROY, G. A. Detection of free chlorine in hydrochloric acid (abst.), 12, 73
- LEROY, M. Action of amides on bromacetophenones (abst.), - - - - - 9, 195
- LESCOEUR, H., and A. Rigaut. Solid cyanogen hydride (abst.), 1, 402
- LEUCKART, R. Reaction of isomeric monobromocinnamic acids with concentrated sulphuric acid (abst.), 4, 173 : A few reactions of aromatic cyanates (abst.), - - - - - 8, 55
- LEVALLOIS, A. Action of solutions of cellulose on polarized light (abst.), - - - - - 6, 93
- LEVINESTEIN, I. Quantitative determination of *o*-, *m*-, and *p*-xylene (abst.), 6, 101 : Xylenes from English and Scotch tars (abst.), 7, 89
- LEVOIR, L. C. Artificial asbestos, or French chalk, for packing and closing leakages (abst.), - - - - - 7, 214
- LEWES, V. Experiments on potassium tetra- and pentathionate (abst.), - - - - - 4, 224
- LEWES, V. B. See Cowper, R.
- LEWKOWITSCH, J. Preparation of nitro acids of fatty series (abst.), 2, 291
- LIDDLE, T. See Smith, W.
- LIDOFF, A. Solubility of aniline in solutions of its salts (abst.), 6, 96
- LIEBEN, A. Density of chlorine at high temperatures, - - - - - 1, 453
- LIEBERMANN, C. Anthracene compounds of chrysazine series (abst.), 1, 290 : Reduction of anthraquinonesulphonic acid (abst.), 1, 291 : Exsiccator for solutions in ether, chloroform, benzene, etc. (abst.), 1, 585 : Azoanthrol dyes (abst.), 4, 266 : Isocinnamic acid present in the alkaloids accompanying cocaine (abst.), - - - - - 12, 161
- LIEBERMANN, C., and A. Bischof. The third anthracenecarboxylic acid (abst.), - - - - - 2, 95
- LIEBERMANN, C., and A. Bollert. Anthramine (abst.), - - - - - 4, 207 : 5, 25
- LIEBERMANN, C., and O. HÖRMANN. Coloring-matters and glucoside sugar of Persian berries (abst.), - - - - - 2, 62

- LIEBERMANN, C., and S. von Kostanecki. On *p*-azocresol (abst.), 6, 161
- LIEBERMANN, C., and M. VÖLTZKOW. Phenyl mustard oil glycolide (abst.), - - - - - 2, 226
- LIEBERMANN, L. Action of bone black on salts (abst.), 1, 95 : Solubility of sulphur in acetic acid (abst.), 1, 99 : Spectrum of fuch-sine (abst.), 1, 578 : Determination of sulphurous acid in wines (abst.), 4, 192 : Products of dry distillation of tartaric acid (abst.), 4, 263 : Apparatus for determination of melting-point of alloys (abst.), 4, 263 : Sulphurous acid in wine (abst.), 4, 263 : Detection of sulphurous acid in wine (abst.), - - - - - 4, 263
- LIEBMANN, A. Synthesis of cumene (abst.), 2, 95 : Synthesis of homologues of phenol (abst.), - - - - - 4, 205
- LIEBSCHÜTZ, M. Examination of butter, 7, 134 : Determination of metallic zinc in zinc dust, - - - - - 7, 136
- LIECHTI, L., and W. Suida. Properties of certain salts of iron and aluminum with reference to their use in dyeing (abst.), 6, 172 : On aniline black (abst.), - - - - - 7, 63
- LIEPMANN, H. See Fittig, R.
- LIGHTFOOT, T. M. Study of the chemical behavior of arsenopyrite, 16, 624
- LINDEMANN, O. Volumetric determination of vanadic acid (abst.), 1, 97 : Estimation of free oxygen by means of phosphorus (abst.), 1, 372
- LINET, L. Combinations of auric chloride with sulphur and sele-nium tetrachlorides (abst.), 8, 20 : New solvents of anhydrous auric chloride (abst.), 8, 34 : Ethereal chloraurophosphites (abst.), - 8, 276
- LINDO, D. Gravimetric determination of chlorine (abst.), 4, 161 : Estimation of phosphoric acid as magnesium pyrophosphate (abst.), 5, 243 : Estimation of phosphoric acid in fertilizers (abst.), 6, 241
- LINDSAY, W. B. See Storer, F. H.
- LINDSEY, J. B. Value of leather refuse, - - - - - 18, 565
- LINEBARGER, C. E. Disulphotetraphenylene, 13, 270 : Experiments in the anthracene series, 17, 354 : Reaction between zinc sulphate and potassium hydroxide, 17, 358 : Vapor-tensions of mixtures of volatile liquids, 17, 615, 690 : Formation of layers in mixtures of acetic acid and benzene, 17, 932 : Determining the molecular masses of liquids by means of their surface-tensions, 18, 514 : Sur-face-tensions of aqueous solutions of oxalic, tartaric, and citric acids, 20, 128 : Speed of coagulation of colloid solutions, 20, 375 : See also Delafontaine, M.
- LINK, W. See Römer, H.
- LINTNER, C. Nitrogenous constituents of barley and malt (abst.), - 6, 173
- LINTON, LAURA A. Technical analysis of asphaltum, - 16, 809 ; 18, 275
- LIPPMAHN, E., and F. Fleissner. On azylines (abst.), - - 5, 52
- LIPPMAHN, E., and J. Hawliczek. Eikosylene (abst.), - - 1, 164
- LIPPMAHN, E., and W. Strecker. On amyldeneaniline (abst.), 1, 164 : Nitrocuminol and its derivatives (abst.), - - - 1, 164
- LIPPMAHN, E., and G. Vortmann. Compounds of nickelous and cobaltous chlorides with tar bases (abst.), - - - 1, 165

- LIPPMAN, E. O. VON. Reducing substance occurring in raw beet sugar (abst.), - - - - - 10, 38
- LIVACHE, A. Oxidation of oils (abst.), - - - - - 8, 106
- LIVERMORE, W. R. The perissad law, - - - - - 12, 426
- LIVERSIDGE, A. Specific gravities of some gem stones, - - - 16, 205
- LIVON, C. See Caillol de Poncy, O.
- LLOYD, F. J. Determination of reverted phosphoric acid (abst.), 4, 164 : Estimation of reverted phosphates (abst.), 4, 224 : Superphosphates and superphosphates (abst.), - - - - - 6, 244
- LOCHERT, H. Combination of glycol with aldehydes (abst.), 9, 172 : 10, 18
- LOCKYER, J. N. Discussion of working hypothesis that the elements are compound (abst.), 1, 113 : Note on the spectrum of sodium (abst.), - - - - - 1, 373
- LOPTE, W. See Bamberger, E.
- LOEB, M. Molecular weight of iodine in its solutions (abst.), 10, 155 : Use of aniline as an absorbent of cyanogen in gas analysis (abst.), 10, 156 : Use of the Gooch crucible as a silver voltameter, 12, 300 : Apparatus for delineation of curved surfaces, - - - - - 13, 263
- LÖSCH, A. Determination of alkaloids in plants (abst.), - - - 1, 548
- LÖSEKANN, G. Behavior of alkaline solutions of aluminum hydroxide towards hydrogen sulphide (abst.), - - - - - 1, 163, 334
- LOEW, O. Source of hippuric acid in urine of herbivorous animals, (abst.), 1, 493 : 2, 138 : Synthetic preparation of formic acid (abst.), 2, 368 : Preparation of a very active platinum black (abst.), 12, 154 : The alterations of preserved milk (abst.), 5, 28 : Formation of nitrous acid and ammonia from free nitrogen (abst.), 12, 350 : Decomposition of ammonium nitrite by means of platinum sponge (abst.), - - - - - 12, 473
- LOEW, O., and T. Bokorny. Reducing properties of living protoplasm (abst.), - - - - - 5, 20
- LÖW, W. Indigo dicarboxylic acid (abst.), - - - - - 8, 51
- LOEWENSTEIN, H. See Norton, T. H.
- LOHSE, O. Oil gas in the blast lamp (abst.), - - - - - 1, 91
- LOIR, A. Double chemical function of monobasic organic acids (abst.), 1, 489
- LOMBARD. Chemical and therapeutical study of salol (abst.), - 9, 197
- LONG, J. H. Observations on American menthol, 14, 149 : Chemical notes from the Columbian Exposition, 15, 250, 312 : Observations on American oil of turpentine, 16, 844 : Precipitation of antimony from solutions of potassium antimonyl tartrate, 17, 87 : Professor Mark Powers (obituary), 17, 586 : Lothar von Meyer (obituary), 17, 664 : On the inversion of sugar by salts, 18, 120, 693 : Formation of antimony cinnabar, 18, 342 : Lavoisier memorial (Note), 19, 170 : Speed of reduction of ferric alum by sugar, - 19, 683
- LONGI, A. Estimation of nitric acid in the presence of other acids (abst.), 6, 239 : Volumetric determination of nitric acid (abst.), 7, 61
- LONGMORE, J. Cotton-seed oil (abst.), - - - - - 8, 206
- LONGUET. Detection of spermatie fluid (abst.), - - - - - 1, 557

- LORD, N. W. Neutrality of ammonium citrate solution, - - 18, 457
- LORIN. Action of oxalic anhydride on sugars (abst.), - - 1, 100
- LOSANTICH, S. M. Action of nitric acid upon diphenylguanidine chloride (abst.), 1, 489: Action of carbon bisulphide on *p*-nitraniline (abst.), 4, 264: Action of nitric acid on tribromaniline (abst.), 4, 265: Direct replacement of amido-group in aromatic amines by halogens (abst.), - - - - 7, 119
- LOUGUININE, W. Heat of formation of isomeric and homologous compounds (abst.), 6, 36: Heat of combustion of some ketones and of two ethereal carbonates (abst.), 6, 90: Heats of combustion of fatty acids and their derivatives (abst.), 8, 183: See also Berthelot, M.
- LOUISE, E. A new hydrocarbon (abst.), 5, 121: Action of anhydrous aluminum chloride upon acetone (abst.), 5, 117: An aromatic diacetone (abst.), 6, 134: Phenylmesitylenecarbinol and its principal ethers (abst.), - - - - 8, 53
- LOVETT, W. J. Examination of gases escaping from chemical works (abst.), - - - - 4, 161
- LOVBOND, J. W. The tintometer (abst.), - - - - 10, 115
- LOVITON, [M]. Method for taking the fusion and solidification points of neutral fatty bodies and of their acids (abst.), - - 8, 65
- LOW, A. H. Technical estimation of lead, 15, 548: Copper assay by the iodide method, 18, 458: Device to prevent loss from spattering, 20, 233: Testing for a yellow azo-color in fats, etc., - 20, 889
- LOWE, G. See Sienier, A.
- LOWE, J. Separation of bismuth from copper (abst.), - - 5, 244
- LUBAVIN, N. Analysis of a phosphorite from Nijni Novgorod (abst.), 6, 158
- LUCIEN, J. Incineration of sugars and of sirups without sulphuric acid (abst.), - - - - 12, 18
- LUCOSSIER, G. Spectroscopic detection of blood (abst.), - 10, 88
- LUDWIG, R. See Classen, A.
- LÜDEKING, C. Analysis of the barium group (abst.), 12, 501: See also Wheeler, H. A.
- LUFF, A. P. See Roberts, W. C.
- LUNGE, G. Normal percentage of sulphuric acid in wine (abst.), 1, 365: Action of sulphur dioxide on nitric oxide (abst.), 4, 72: Study of reactions for production of soda by new methods (abst.), 4, 75: Behavior of nitrogen tetroxide with sulphuric acid (abst.), 4, 265: On the existence of nitrous anhydride in form of vapor (abst.), 4, 266: The titration of sulphurous acid (abst.), 6, 26: The action of soda, lime, and magnesia on the salts of ammonia and organic amines, etc. (abst.), 6, 27: The gasvolumeter (abst.), 12, 175: Apparatus for promoting the interaction of liquids and gases, 15, 361: Education of industrial chemists, 15, 481: Estimation of sulphur in pyrites, - - - 17, 181, 772; 18, 685
- LUNGE, G., and J. H. Smith. The oxidation of the sulphur compounds occurring in the manufacture of caustic soda (abst.), - 6, 28

- LUNGWITZ, E. See Schweitzer, H.
- LUPTON, N. T. Effects on butter from feeding cotton-seed food, 13, 134 : Effect of decomposing organic matter upon natural phosphates, - - - - - 14, 353
- LUX, F. Detection of fatty oils when mixed with mineral oils (abst.), - - - - - 7, 226 ; 8, 39
- LWOFF, J. Action of chlorine on isobutylene (abst.), 6, 95 : See also Kelbe, W.
- LYTE, F. M. See Maxwell-Lyte, F.
- MAAS, P. See Smith, E. F.
- MABEN, T. Apricot, peach, and walnut oils (abst.), 8, 184 : See Dechan, M.
- MABERY, C. F. How chemistry is best taught, 15, 463 : Examination of the atmosphere of a large manufacturing city, 17, 105 : Inaccuracies in the determination of carbon and hydrogen of combustion, 20, 510
- MABERY, C. F., and L. Goldsmith. Influence of antiseptics on the digestion of blood fibrin by pepsin in a hydrochloric acid solution, 19, 889
- MABERY, C. F., and O. T. Klooz. Composition of American kaolins, 18, 909
- MABERY, C. F. See also Robinson, A. E.
- MACADAM, W. I. Manures, natural and artificial (abst.), - - - 10, 47
- MACADAM, W. J. Composition of butyrellite (abst.), - - - 9, 6
- MCCARTER, H. G. See Sadtler, S. P.
- MCCAY, L. W. Reduction of arsenic acid solutions (abst.), 7, 123 : Action of hydrogen sulphide on arsenic acid (abst.), - - - 10, 11
- MCCULLOCK, N. Estimation of iodine (abst.), - - - 10, 27
- MC ELROY, K. P. Detection of salicylic acid in food, 16, 198 : Contraction of aqueous solutions of acetone, 16, 618 : Estimation of iron and alumina in phosphates, 17, 260 : See also Bigelow, W. D.
- MCILHINEY, P. C. The iodine figure of rosin, 16, 56 : New method of analyzing fats and resins, 16, 275 : The analysis of varnishes, 16, 344 : Gantter's process for determining the iodine figure of fats, 16, 372 : The quantitative separation of rosin oil from mineral oils, 16, 385 : Method of determining the Koettstorfer figure of dark-colored substances, 16, 408 : Device for weighing oil for analysis, 16, 882 : The Cassel-Hinman gold and bromine process, 18, 451, (61) : Method for determining the resistance of electrolytes, - - - - - 20, 206
- MCINTIRE, C. Solubility of arsenic trioxide in coffee decoctions, P. 1, 2, 56
- MACIVOR, R. W. E. Analysis of acid water from Lake Hope (abst.), 9, 168
- MCKENNA, C. F. Dr. Gideon E. Moore (obituary), - - - 17, 659
- McKERLIE, J. Milk ripener and purifier (abst.), - - - 8, 43
- MACKINTOSH, J. B. Determination of graphite in minerals (abst.), 7, 123 : Action of hydrofluoric acid on silica and the silicates, - 8, 210
- MCLEOD, H. Formation of ozone during slow oxidation of phosphorus (abst.), 2, 351 : Evaporation *in vacuo* (abst.), 5, 235 : Decomposition of potassium chlorate by heat in the presence of manganese dioxide (abst.), - - - - - 10, 187

- McMURTRIE, W.** Opening address, Section of Technical Chemistry, World's Congress of Chemists, 15, 545 : Dr. Henry A. Mott (obituary), 19, 90 : Theodore A. Havemeyer (obituary), 19, 588: Some records of recent progress in industrial chemistry (review), 19, 894: Some records of the year's progress in applied chemistry (review), - - - - - 20, 967
- McPHERSON, W.** See Weber, H. A.
- McTAGGART, J. R.** See Noyes, W. A.
- MÄHL, J.** See Friedländer, T.
- MAERCKER, M.** Reducing effect of different kinds of sugar on alkaline copper solution (abst.), - - - - - 1, 342
- MAGATTI, G.** Oxidation of substituted phenols (abst.), - - - - - 2, 223
- MAGEE, W. H.** See Dennis, L. M.
- MAGULUNE, M.** On the identity of dambose and inosite (abst.), - - - - - 9, 111
- MAHON, R. W.** Volumetric determination of zinc (abst.), 4, 166 : Estimation of phosphorus in steel, - - - - - 19, 792 ; 20, 429
- MAILFERT.** Researches on ozone (abst.), - - - - - 4, 235, 237
- MAISCH, H.** See Gattermann, L.
- MALLET, J. W.** Production of magnesium nitride by smothered combustion of magnesium in air, P. 1, 2, 17 : Nitrogen iodide (abst.), 1, 112 : An unusual case of electrolysis (abst.), 2, 223 : Properties of pure metallic aluminum, 4, 145 : Fractional dehydration of ammonium alum, etc., 4, 180 : Experiments upon alum baking powders, etc. (abst.), - - - - - 10, 171
- MALOT, C.** Direct titration of phosphoric acid with uranium nitrate (abst.), - - - - - 9, 118
- MANDEL, J. A.** See Bourgougnon, A., and Friedburg, L. H.
- MANN, C.** Volumetric estimation of zinc (abst.), 1, 329, 535 : Detection of citric acid (abst.), - - - - - 7, 180
- MAQUENNE, L.** Action of ozone on manganese salts (abst.), 4, 234 : Preparation, properties, and constitution of inosite (abst.), 9, 103 : A few derivatives of saccharic acid and of mucic acid (abst.), 10, 17 : See also Deherain, P. P., and Millot, A.
- MARCANO, V.** New platinum sulphocyanate (abst.), - - - - - 2, 363
- MARCKWALD, W.** Furfuran derivatives (abst.), 9, 214 : Trithioacetaldehydes (abst.), 9, 217 : Formation of the quinoline ring, a contribution to the benzene theory (abst.), - - - - - 12, 234
- MARIGNAC, C. DE.** Review of Berthelot's "Mécanique Chimique," 2, 161
- MARPMANN, G.** Determination of water in milk (abst.), - - - - - 4, 188
- MARQUARDT, A.** See Einhorn, A.
- MARQUARDT, L.** Determination of fusel oil in brandy (abst.), 5, 27, 50 : New agent for thickening mineral lubricating oils (abst.), 8, 109
- MARTIN, W. J.** The cyanide method of extracting gold from its ores. Application to assays, etc., - - - - - 18, 309
- MARTINON.** Action of hydrogen dioxide on the oxides of chromium (abst.), - - - - - 8, 162
- MARX.** Arrangement for moving rider-weights (abst.), - - - - - 1, 586

- MASON, F. H. German economy in iron manufacture, - - - 15, 284
- MASON, W. P. "Water" results and the public, 9, 30 : Drinking-water and disease, 9, 44 : Action of nitric acid on sugar, 9, 45 : Standardizing hydrometers, 9, 156 : The United States gallon, 9, 186 : On fatal poisoning by carbon monoxide, 10, 176 : An alchemical chart, 13, 293 : Estimation of nitrates in water, 16, 71 : Estimation of chlorine in water, 16, 71 : The phenolsulphonic acid process for nitrates in water, 16, 72 : Expert testimony, 16, 273 : Boric acid works at Larderele, 16, 538 : Notes on the hardening of mortar, 16, 733 : The quality of water supplies, 16, 772 : Henry Bradford Nason (obituary), 17, 339 : Chemical versus bacteriological examination of potable water, 18, 166 : New bacteria counter, 20, 507
- MASON, W. P., and J. W. Bowman. Loss of gold and silver during scorification assay, 16, 313 : Note on the test for strychnine, - 16, 824
- MASON, W. P., and S. K. Hine. Note on the direct oxidation of organic matter in water, - - - - - 14, 233
- MASSON, O. Action of nitrous anhydride on glycerol (abst.), - 5, 233
- MATHEWS, J. A. Phthalimide, 18, 679 : Action of organic acids upon nitriles, 20, 648 : See also Miller, E. H.
- MATSUI, N. Raw materials used in Arita porcelain, - - - 2, 315
- MATTHEWS, F. F. Condensation products of aldehydes with ethyl acetoacetate and substituted acetoacetates. (abst.), 5, 101 : See also Claisen, L., and Hodgkinson, W. R.
- MATTHEWS, J. M. Derivatives of the tetrachlorides of zirconium, thorium, and lead, 20, 815 : Derivatives of the tetrabromides of zirconium and thorium, 20, 839 : Preparation of zirconium nitrides 20, 843 : Separation of iron from zirconium, etc., 20, 846 : See also Smith, E. F.
- MAUMENÉ, E. J. Composition of slate (abst.), 2, 131 : Synthesis of quinine (abst.), 4, 236 : Upon oenocyanine (abst.), 5, 119 : On the existence of manganese in wines (abst.), 6, 200 : Alkaline hydroxides (abst.), 7, 283 : Combinations of water with salts (abst.), 8, 179 : Water of combination of alums (abst.), 8, 272 : Alcoholate of potassium hydroxide (abst.), 8, 273 : On Fahlberg's "saccharin" (abst.), 9, 34 : On inactose or neutral sugar (abst.), - 10, 16
- MAURO, F. Complex organic acids containing boric acid (abst.), - 2, 434
- MAURY, G. P. See Murray, C. B.
- MAXWELL, W. Relative sensibility of plants to acidity in soils, 20, 103 : Methods and solvents for estimating the elements of plant food probably available in soils, 20, 107 : Evaporation and plant transpiration, - - - - - 20, 469
- MAXWELL-LYTE, F. Estimation of chlorine, bromine, and iodine in the presence of one another (abst.), 6, 49 : Copper oxychloride as a paint (abst.), 6, 291 : Curious association of hydrocarbons with rock salt in nature (abst.), - - - - - 10, 75
- MAYER, A. Specific gravity of oil from artificial butter (abst.), 4, 188 : Method for detecting adulterated butter (abst.), 8, 87 : Con-



- cerning the method of determining the melting-point of butter, 15, 661
- MAYER, F. New preparation of ethylsulphonic acid (abst.), - 12, 158
- MAYER, H. On the toxic effects of the lower fatty acids (abst.), - 8, 229
- MEADE, R. K. Determination of lead in lead ores, 19, 374: New apparatus for sulphur determinations in iron and steel, and a useful form of wash-bottle, 19, 581: Volumetric method for the determination of copper, - - - - - 20, 610
- MEDICUS, L., and E. Schwab. Determination of starch in sausages (abst.), - - - - - 1, 571
- MEER, G. H. Determination of silica in blast-furnace slag, - 19, 370
- MÉHU, C. Determination of urea by sodium hypobromite (abst.), 2, 430: Solubility of mercuric iodide in fatty compounds and other solvents (abst.), 8, 40: Destruction of foam in urea determinations (abst.), - - - - - 9, 123
- MEINECKE, C. Volumetric estimation of manganese by permanganate (abst.), 7, 91: Analysis of clay (abst.), - - - - - 9, 35
- MEISSL, E. Analysis of butter fat (abst.), - - - - - 1, 569
- MEISSLER, A. See Goldschmidt, H.
- MELCKEBEKE, E. VAN. Oxalic acid from oxidation of animal substances (abst.), - - - - - 1, 106
- MELDOLA, R. Contributions to chemical history of aromatic derivatives of methane (abst.), 4, 202: Constitution of some bromine derivatives of naphthalene (abst.), 5, 91: Researches on secondary and tertiary azo-compounds (abst.), 6, 94: Test for nitrous acid (abst.), - - - - - 6, 288
- MELDOLA, R., and E. R. Moritz. Kjeldahl method for nitrogen (abst.), - - - - - 10, 45
- MELIKOFF, P. Oxacrylic acid (abst.), 2, 226: See also Werigo, B.
- MELLON, W. W. Free acid in superphosphates (abst.), - 9, 224
- MENKE, A. E., and W. B. Bentley. New derivatives of vanillin, - 20, 316
- MENKE, A. E. See also Wright, C. R. A.
- MENSCHUTKIN, N. Influence of isomerism of alcohols and acids in formation of compound ethers (abst.), 1, 256, 2, 182: Etherification of unsaturated monobasic acids (abst.), 2, 172: Structural formulæ of sorbic and hydrosorbic acids (abst.), 2, 173: Etherification of hydroxy acids (abst.), - - - - - 4, 205
- MERCKLING, [M]. Value of Baudouin's reagent to detect sesame oil (abst.), - - - - - 9, 177
- MERGET, A. Reagent for mercury vapor (abst.), - - - - - 1, 336
- MERING, J. VON. See Musculus, F.
- MERLING, G. Tropine (abst.), - - - - - 4, 226
- MERMET, A. See Delachanal, B.
- MERRILL, R. S. Explosions and method of testing petroleum oil, P. 1, 115
- MERTINS, P. S. See Howe, J. L.
- MERZ, V., and J. Tibiriçá. Synthetic preparation of formic acid (abst.), - - - - - 2, 94
- MERZ, V., and W. Weith. Synthesis of oxalic acid (abst.), - 5, 50

- MERZ, V. See Gasiorowski, K., and Gousiorowski, K.
- MESSINGER, J. Acetone in methyl alcohol (abst.), 10, 195 : Determination of carbon in organic compounds (abst.), - - - 12, 477
- MESSINGER, J., and G. Vortmann. Volumetric determination of phenols (abst.), - - - - - 12, 477
- METZGER, S. *p*-Dibromquinoline (abst.), - - - - - 6, 236
- MEULEN, H. G. L. VAN DER. See Mulder, E.
- MEUNIER, S. Artificial production of spinel (abst.), - - - 9, 168
- MEYER, E. VON. Note on cyanethine (abst.), 1, 497 : Isatoic acid (abst.), - - - - - 7, 174
- MEYER, F. Acids produced from xylenes and phthalic anhydride (abst.), 5, 17 : See also Gresly, J.
- MEYER, F. L. See Smith, E. F.
- MEYER, G. See Ladenburg, A.
- MEYER, H. Lactates (abst.), - - - - - 8, 275
- MEYER, L. Improved method of purifying mercury (abst.), 1, 378 : History of the periodic law (abst.), - - - - - 2, 225
- MEYER, P. J. Mustard oil glycolide (abst.), - - - - - 4, 267
- MEYER, R. Tetrabrombenzene (abst.), 4, 175 : Microscopic examination of printed cotton goods (abst.), - - - - - 5, 125
- MEYER, R., and E. Müller. Constitution of cumic acid (abst.), 4, 266 : Synthesis of *p*-propylbenzoic acid (abst.), 5, 20 : Synthesis of cuminic acid (abst.), - - - - - 5, 51
- MEYER, V. Note on the density of chlorine, 1, 381 : Answer to Seelheim's remarks on my experiments on chlorine, 1, 481 : Observations on vapor densities (abst.), 2, 371 : Calorimetric determination of temperature (abst.), 2, 371 : Lecture experiments (abst.), 4, 227 : On hydroxylamine chloride (abst.), 5, 62 : On isonitroso compounds (abst.), 5, 65 : Synthesis of thiophen (abst.), 7, 206 : *o*-Cyanophenol (abst.), 10, 38 : The chemical problems of to-day, 11, 101
- MEYER, V., and K. Auwers. Formation of anhydrides in the succinic acid series (abst.), - - - - - 12, 157
- MEYER, V., and A. Müller. Constitution of nitrosomalonic acid (abst.), - - - - - 5, 131
- MEYER, V., and H. Züblin. Contributions to knowledge of chlorine (abst.), 2, 371 : Platinum bromide (abst.), 2, 371 : Density of bromine vapor at a yellow heat (abst.), 2, 371 : Experiments on vapor densities of alkali metals (abst.), 2, 371 : Behavior of iodine at high temperatures (abst.), 2, 371 : See also Auwers, K., Demuth, R., Goldschmidt, H., and Wittenberg, M.
- MEYERINGH, W. Volumetric estimation of hydroxylamine (abst.), 1, 346
- MICHAEL, A. Synthesis of phenol glucoside and orthoformyl glucoside or helicin (abst.), 1, 403 : Synthesis of helicin and phenylglucoside (abst.), 2, 42 : New formation of stilbene, and some of its derivatives (abst.), 2, 42 : Monoethylphthalate, etc. (abst.), 2, 220 : Preparation of formaldehyde (abst.), 2, 221 : New formation of ethyl mustard oil (abst.), - - - - - 2, 221

- MICHAEL, A., and L. M. Norton. Action of iodine monochloride on aromatic amines (abst.), - - - - - 1, 484
- MICHAELIS, A., and P. Becker. Monophenylboron chloride, and the pentavalence of boron (abst.), 2, 96: Tolylmethylketone (abst.), 4, 206
- MICHAELIS, A., and L. Gleichmann. Di- and triphenylphosphine (abst.), - - - - - 5, 22
- MICHAELIS, A., and A. Reese. On aromatic antimony compounds and a method of forming aromatic arsenic compounds (abst.), 5, 63
- MICHEL, L. A few crystallized selenates (abst.), - - - - - 10, 76
- MIERS, H. A. Crystallography of bromostychnine (abst.), - - - - - 7, 117
- MILLER, A. K. Dihydroxybenzoic acids and idosalicyclic acids (abst.), - - - - - 5, 29, 59
- MILLER, E. H. Succinimide, 16, 463: Ferrocyanides of zinc and manganese, - - - - - 18, 1100
- MILLER, E. H., and J. A. Mathews. Table of factors, 18, 903: Ferrocyanides of zinc and manganese, - - - - - 19, 547
- MILLER, F. W. See Baskerville, C., and Venable, F. P.
- MILLER, H. K. Electrical disturbance in weighing, - - - - - 20, 428
- MILLER, H. VON. Note on malonic acid (abst.), - - - - - 1, 494
- MILLER, J. A. The analysis of malt, - - - - - 16, 353
- MILLER, W. VON. Rouge français (abst.), - - - - - 2, 226
- MILLER, W. VON, and G. Rohde. Aldehydes of the hydrocinnamic series (abst.), 12, 231: Contributions to knowledge of Étard's reaction (abst.), - - - - - 12, 231
- MILLIAU, E. Methods of testing fats and oils, - - - - - 15, 153
- MILLOT, A. Reversion of phosphates in superphosphates used as fertilizers (abst.), 2, 131: Properties of bicalcic phosphate (abst.), 2, 133: Synthesis of ulmic bodies (abst.), 2, 365: Determination of zinc in zinc ores (abst.), 4, 166: Electrolysis of carbon in ammonia (abst.), - - - - - 8, 178
- MILLOT, A., and L. Maquenne. Volumetric determination of arsenic (abst.), 1, 333: Fermentations of beet-root juice during diffusion (abst.), - - - - - 2, 91
- MILLS, E. J. Action of potash on resin (abst.), - - - - - 8, 206
- MILLS, E. J., and T. Akitt. Estimation of oils and fats (abst.), - - - - - 6, 245
- MILLS, E. J., and J. Buchanan. Photochemical estimation of graded tint (abst.), - - - - - 10, 86
- MILLS, E. J., and G. Donald. Action of oxides on salts: potassium chlorate and ferric oxide (abst.), - - - - - 4, 142
- MILLS, E. J., and J. Pettigrew. The steeping of barley (abst.), 4, 143
- MILLS, E. J., and A. G. Rennie. Effect of temperature in dyeing (abst.), 6, 199
- MILLS, E. J., and J. Takamine. Absorption of weak reagents by cotton, silk, and wool (abst.), - - - - - 5, 98
- MIQUEL, P. Succinic fermentation (abst.), 1, 273: A new ferment of urea (abst.), 1, 387: Bacillus ferment of urea (abst.), 1, 488: Sulphydric fermentation (abst.), 1, 489: Antiseptics and bacteria (abst.), - - - - - 6, 79

- MITCHELL, C. A. See Hehner, O.
- MITCHELL, H. W. Note on litmus, - - - - P. 1, 79.
- MITCHELL, W. L. See Wells, H. L.
- MIXER, C. T., and H. W. DuBois. The Zimmermann-Reinhardt method for the determination of iron in iron ores, 17, 405 : Särnstrom's method of determining manganese in iron ores, 18, 385 : Notes on determination of insoluble phosphorus in iron ores, - 19, 614
- MIXTER, W. G. Compounds of aromatic amines with silver salts (abst.), - - - - 1, 483.
- MÖHLAU, R. Orthodiamidodiphenetol (abst.), 1, 495 : On methylene blue (abst.), - - - - 6, 86.
- MOHR, C. Volumetric determination of phosphoric acid (abst.), 4, 164 : Remarks on azotometry (abst.), - - - - 6, 96
- MOHR, F. Nature of cohesion and its chemical signification (abst.), 2, 57
- MOISSAN, H. Amalgams of chromium, etc. (abst.), 1, 276 : Iron reduced by hydrogen (abst.), - - - - 1, 401
- MOITESSIER, A. See Engel, R.
- MONNET, P. Reduction of cupric salts by sugars (abst.), - - 10, 189
- MONNET, P., F. Reverdin, and E. Nölting. Methylaniline, methyltoluidine, and derived coloring-matters (abst.), 1, 273 : Presence of metanitrotoluene in commercial nitrotoluene (abst.), 1, 486 : Dimethylnaphthylamine and naphthoquinone (abst.), - 2, 91
- MONNETY COS, P. Production of a gray color on fiber by simultaneous oxidation of aromatic mon- and diamines (abst.), - 8, 231
- MONNIER, D. On Skrivanoff's battery (abst.), - - - - 6, 126
- MONOT. Manufacture of crystal glass (abst.), - - - - 1, 172
- MOORE, C. C. Determination of potash without the previous removal of iron, calcium, etc., - - - - 20, 340
- MOORE, G. E. Progress of analytical chemistry, - - 1, 83, 320, 527
- MOORE, R. W. On Koettstorfer's method of butter analysis (abst.), 6, 311 : Relation of cocoanut oil to methods of butter analysis, 7, 188 : Comparative results in the analysis of fats, 11, 144 : Analysis of marine oils, - - - - 11, 155
- MOORE, T. Separation of zinc and nickel (abst.), - - - - 6, 288
- MORAHT, H. See Krüss, G.
- MORAWSKI, T. Delicate reaction for fir resin (abst.), - - 10, 195
- MORAWSKI, T., and H. Demski. Examination of oils containing unsaponifiable fats (abst.), - - - - 8, 39
- MORAWSKI, T. See also Stingl, J.
- MOREHEAD, J. T., and G. de Chalmot. Manufacture of calcium carbide, - - - - 18, 311
- MOREL, J. See Hugouennq, L.
- MORGAN, T. M. On a new process for the extraction of indigotine from commercial indigo, - - - - 12, 302
- MORIN, H. Essential oil of *Licari kanali* (abst.), - - - - 4, 233
- MORITZ, E. R. See Meldola, R.
- MORLEY, E. W. Moisture retained by gases dried by means of sul-

- phuric acid (abst.), 7, 295 : Moisture remaining in gases dried by means of phosphorus pentoxide (abst.), 10, 67 : Volumetric composition of water, 12, 275 : Carbon, an impurity in hydrogen affecting determination of atomic weights, 12, 276 : Jean Servais Stas, 14, 173
- MORLEY, H. F. Methylated diethylenamines (abst.), 2, 223 : Oxypropyltoluidine (abst.), 4, 206 ; 5, 29, 58 : Ethyl thioxalate (abst.), 5, 236
- MORLEY, H. F., and A. G. Green. On propylenechlorhydrin (abst.), 7, 118
- MORRELL, T. T. Estimation of small quantities of potash with platinic chloride, 2, 145 : Estimation of copper as oxide, 2, 146 : Composition of gases in cavities of a Bessemer ingot, 2, 146 : Determination of alcohol with cobalt sulphocyanide, - - - 2, 340
- MORRIS, G. H.  $\alpha$ -Methylhydroxysuccinic acid, etc. (abst.), 2, 342 : Constituents of resin spirit (abst.), - - - 4, 200
- MORSE, F. W. Oven for drying in hydrogen, - - - 15, 709
- MORSE, H. N., and W. S. Bayley. On haydenite (abst.), - 6, 158
- MORSE, H. N. See also Remsen, I.
- MORTON, H. Elimination of antimony from the human system, P. 2, 142 : Chronology of isomeric purpurines, 1, 184 : Effect of change of density in alum purpurine solutions on the absorption bands, 2, 362
- MORTON, H., and W. E. Geyer. New sulpho acid of phenanthrene, 2, 203
- MORY, A. V. H. See Noyes, W. A.
- MOTT, H. A. Manufacture of artificial butter, P. 1, 154 : Application of polarized light to the examination of the alkaloids of the quinine group, P. 2, 57 : Absorption of sugar by bone black, 1, 509 : Valuation of the sugars of commerce, 1, 514 : Effects of alumina salts on gastric juice in digestion, 2, 13 : An examination of the meat of poultry fattened by the French process, - - 12, 44
- MOYER, J. B. Metal separations by means of hydrochloric acid gas, 18, 1029 : See also Smith, E. F.
- MUCK, F. Apparatus for evaporating ammoniacal solutions at a low temperature (abst.), - - - 9, 220
- MÜHLHÄUSER, O. On carborundum, - - - 15, 411
- MÜLLER, A. Heat of combustion of certain amines (abst.), 7, 289 : Preparation of a lubricant (abst.), 8, 109 : See also Meyer, V., and Zimmermann, Y.
- MÜLLER, C. L., and G. Kircher. Action of lead and manganese dioxide on haloid salts of metals in presence of acetic acid (abst.), 5, 23
- MÜLLER, C. L. See also Erlenmeyer, E.
- MÜLLER, E. See Meyer, R.
- MÜLLER, F. C. G. Gases enclosed in iron and steel (abst.), 1, 165 : Researches on the Bessemer process (abst.), - - - 1, 165
- MÜLLER, M. On the purple colors derived from gold (abst.), - 7, 76
- MÜLLNER, F. See Donath, E.
- MÜNTZ, A. Galactin (abst.), 4, 231 : Oxidation of iodine in the process of nitrification (abst.), 7, 287 : Existence of the constituents of milk-sugar in plants (abst.), 8, 62 : On the formation of deposits of sodium nitrate (abst.), - - - 8, 70

- MUIR, M. M. P. Influence of temperature upon the decomposition of barium chloride by potassium oxalate in aqueous solution (abst.), 2, 346: Action of water on bismuth iodide; a lecture experiment (abst.), 4, 142: Volumetric determination of bismuth (abst.), 4, 167: Detection of tin in presence of antimony (abst.), - - 4, 168
- MUIR, M. M. P., and C. E. Robbs. Volumetric estimation of bismuth as oxalate (abst.), - - - - 4, 141
- MUIR, M. M. P., and C. Slater. Influence of dilution on chemical changes (abst.), - - - - 2, 345
- MULDER, E. Normal cyanic acid and its derivatives (abst.), - 4, 176
- MULDER, E., and H. G. L. van der Meulen. Thermochemistry of ozone (abst.), - - - - 4, 266
- MULLER, A. See Ortlieb, J.
- MULLER, J. A. Influence of pressure and temperature in the action of potassium chloride on crude methylamine carbonate (abst.), 9, 103
- MUNROE, C. E. Apparatus for obtaining distilled water from the service steam, P. 1, 211: Estimation of manganese as pyrophosphate, P. 1, 215: Flashing test for gunpowder, 6, 7: Spontaneous decomposition of explosive gelatine, 6, 13: Determinations of the firing points of various explosives, 12, 57: Peculiar perforation of zinc rods, 13, 286: Composition of certain modern powders, 15, 1: Determination of relative sensitiveness of explosive substances, 15, 10: Preliminary report of the committee on the tariff, 16, 102: Inspection of cotton for use in manufacture of guncotton, 17, 783: Development of smokeless powder (review), 18, 819, (66): Early specimen of guncotton, - - - - 19, (12)
- MUNSCHIED. Blowing machine (abst.), - - - - 1, 91
- MUNSELL, C. E. An analysis of slag from ignited garbage, 6, 188: Analysis of *sam-shu*, a Chinese liquor, 7, 243: The lactometer, its utility and reliability, 10, 122: Some analyses of carbon minerals, 13, 143
- MURRAY, C. B., and G. P. Maury. Rapid method for determination of silicon in silico-spiegel and ferro-silicon, - - - 19, 138
- MURRILL, P. An efficient gas-pressure regulator, - - - 20, 501
- MUSCULUS, F., and C. Amthor. Composition of wines of bad years (abst.), - - - - 4, 192
- MUSCULUS, F., and D. Gruber. Action of diastase or dilute sulphuric acid on starch (abst.), - - - - 1, 101
- MUSCULUS, F., and J. von Mering. Action of diastase, etc., on starch and glycogen (abst.), - - - - 1, 173, 273
- MUTER, J., and L. De Koningh. Method for analysis of fats and oils (abst.), - - - - 10, 194
- MYLIUS, E. Volumetric determination of zinc in potable water (abst.), 1, 564
- NÄGELI, E. On hydroxylamine reactions (abst.), - - - 5, 126
- NAKAMURA, T. Cause of diminishing flame in lamps fed with inferior kerosene (abst.), - - - - 6, 29
- NATANSON, S. Fittica's fourth nitrophenol (abst.), - - - 2, 371
- NAUDIN, L. On anthemene. Researches on Roman camomile (abst.), 6, 191

- NAUMANN, A. Stereochemical considerations (abst.), - - - 12, 155
- NEMIROWSKY, J. Action of phosgene upon glycolchlorhydrin (abst.), - - - - - 7, 144
- NENCKI, M. Fungoid growth in absence of oxygen (abst.), 1, 494 : Empirical formula of skatole (abst.), - - - - 2, 137
- NENCKI, M., and P. Giacosa. Presence of bacteria in organs of healthy animals (abst.), - - - - - 2, 289
- NENCKI, M., and F. Schaffer. Chemical composition of bacteria (abst.), - - - - - 2, 136
- NESSLER, J. Detection of free tartaric acid, and on sulphuric acid, in wine [(abst.), 1, 364 : Reply to Lunge, on sulphuric acid in wine (abst.), 1, 365 : Valuation of wines (abst.), - - - 6, 138
- NESSLER, J., and M. Barth. Method for analysis of wine (abst.), 4, 189
- NEUBAUER, H. Determination of phosphoric acid as magnesium pyrophosphate, - - - - - 16, 289
- NEUMANN, S. Estimation of quinine in quinine tannate (abst.), 12, 120
- NEUMEISTER, R. Bromdichloracetic acid and chlordibromacetic acid (abst.), 4, 269 : See also Jacobsen, O.
- NEVILLE, R. H. C., and A. Winther. Orcinol and some other dihydroxytoluenes (abst.), - - - - - 5, 61
- NEWMAN, H. E. See Norton, T. H.
- NIBELIUS, A. W. Design for water-bath, - - - - - 15, 374
- NICHOLSON, H. H., and S. Avery. Electrolytic determination of iron, nickel, and zinc, - - - - - 18, 654
- NICOL, W. W. J. Action of heat on thioformanilide (abst.), 4, 206 : Volume alteration attending the mixture of salt solutions (abst.), 5, 97 : Molecular volume of salt solutions (abst.), 6, 48 : The connection between pseudo solution and true solution (abst.), - - - - - 6, 286
- NIEDERIST, G. Action of water on haloid compounds of alcohol radicals (abst.), - - - - - 2, 65
- NIEHLS, W. Improved mercury thermometer for high temperatures, 16, 396 : Scale of hardness for glass, - - - 16, 406
- NIEMÖLLER, F. Physical properties of chemical compounds (abst.), 6, 43
- NIETZKI, R. Some derivatives of quinol (abst.), 1, 161 : Naphthylsulphuric acid (abst.), 4, 227 : Dye-stuffs, resulting from the simultaneous oxidation of *p*-diamines with monamines (abst.), 6, 289 : *p*-Amidoacetanilide and a few new azo-compounds (abst.), - - - - - 7, 55
- NIETZKI, R., and T. Benckiser. *o*-Nitranilinesulphonic acid and a new method of preparing *o*-nitraniline (abst.), - - - 7, 227
- NIETZKI, R., and O. Goll. On azonaphthalene (abst.), - - 7, 228
- NILSON, L. F. Bunsen's older method of separating antimony from arsenic (abst.), 1, 332 : Atomic weight of thorium (abst.), - 5, 118
- NITSCHKE, F. Detection of hydrocarbons in fat and oil (abst.), 8, 86
- NOACK, E. Preparation of carbon monoxide (abst.), 5, 64 : Fluidity of anhydrous and diluted acetic acid (abst.), - - - 8, 229

- NOBLE, SIR A., and Sir F. A. Abel. Combustion of gunpowder (abst.), - - - - - I, 399
- NÖLTING, E. An isocyanide in the lighter portions of commercial benzene (abst.), 7, 29: Notes on *o*-nitrobenzyl chloride, on the high boiling phenols of coal tar, on the constitution of phthalyl chloride (abst.), - - - - - 7, 56
- NÖLTING, E., and A. Collin. Formation of a blue from rosaniline (abst.), 6, 287: Pyridine carboxylic acids (abst.), 6, 287: On the constitution of styphnic acid (abst.), 6, 287: Nitrating under various conditions (abst.), 6, 309: Nitro-*o*-toluidine and a few of its derivatives (abst.), - - - - - 6, 310
- NÖLTING, E., and O. Kohn. Azo- and disazo-compounds of the cresols (abst.), 7, 54: Nitroso-*o*-cresol (abst.), - - - - - 7, 55
- NÖLTING, E., and O. N. Witt. On *o*-amidoazo-compounds (abst.), 6, 82
- NÖLTING, E. See also Monnet, P., and Reverdin, F.
- NÖRDLINGER, H. Bicuhyba fat (abst.), 8, 42: Oxidation of pure myristic acid with nitric acid (abst.), 8, 205: Free fatty acids in oils (abst.), - - - - - 11, 55
- NORRIS, R. S. See Benedict, F. G.
- NORTON, C. H. See Tscherniac, J.
- NORTON, L. M. See Michael, A.
- NORTON, T. H. The contributions of chemistry to the methods of preventing and extinguishing conflagration, 17, 137, 251, 361: New forms of gas generators, 18, 1057: Some peculiar forms of iron, 19, 108: Tungsten-iron alloy, 19, 110: Use of aluminum for condensers, 19, 153: Derivatives of benzenesulphonic acid, 19, 835
- NORTON, T. H., and H. Loewenstein. Salts of dinitro- $\alpha$ -naphthol with various metallic bases, - - - - - 19, 923
- NORTON, T. H., and H. E. Newman. Soluble compound of hydrazine with monocalcium phosphate, - - - - - 19, 838
- NORTON, T. H., and D. M. Roth. Volatility of certain inorganic salts, 19, 155: On the existence of orthosilicic acid, - - - - - 19, 832
- NORTON, T. H., and I. J. Smith. On certain amine derivatives of dinitro- $\alpha$ -naphthol and its chlorination, - - - - - 19, 927
- NORTON, T. H., and J. Tscherniac. Halogen derivatives of ethyl acetamide, P. 2, 115: Glycollide, P. 2, 118: Ethoxy-acetonitrile, P. 2, 124
- NOURRISSON, C. Anisoilphthaloylic acid (abst.), - - - - - 8, 182
- NOYES, A. A. The reliability of dissociation-values determined by electrical conductivity measurements, - - - - - 20, 517
- NOYES, A. A., and E. S. Chapin. Solubility of acids in solution of the salts of other acids, - - - - - 20, 751
- NOYES, A. A., and J. T. Dorrance. Electrolytic reduction of par-nitro compounds in sulphuric acid solution, - - - - - 17, 855
- NOYES, A. A., and D. Schwartz. Solubility of salts of weak acids in stronger acids, - - - - - 20, 742
- NOYES, A. A., and R. S. Wason. Velocity of reaction between ferrous chloride, potassium chlorate, and hydrochloric acid, - 19, 199



- NOYES, A. A., and W. H. Watkins. Occurrence of trimethylene glycol as a by-product in glycerol manufacture, - - - 17, 890
- NOYES, A. A., and W. R. Whitney. Rate of solution of solid substances in their own solutions, - - - - 19, 930
- NOYES, A. A., and E. H. Woodworth. The theory of solubility effect in the case of tri-ionic salts, - - - - 20, 194
- NOYES, W. A. Quantitative work for beginners in chemistry, 16, 59 :  
 Detection of strychnine in an exhumed human body, 16, 108 :  
 Post-mortem detection and estimation of strychnine, 16, 720 :  
 Preparation of diethyl malonic ester, 18, 1105 : Toronto meeting of the British Association for the Advancement of Science, 19, 840
- NOYES, W. A., and W. M. Blinks. The determination of benzene in illuminating gas, - - - - 16, 697
- NOYES, W. A., W. M. Blinks and A. V. H. Morey. Oil gas, - 16, 688
- NOYES, W. A., C. B. Dudley, and W. F. Hillebrand. Preliminary report of the Committee on Coal Analysis, - - - 20, 281
- NOYES, W. A., and E. D. Frohman. The volumetric determination of phosphorus in steel, - - - - 16, 553
- NOYES, W. A., J. R. McTaggart, and H. W. Craver. Determination of heating effects of coals, - - - - 17, 843
- NOYES, W. A., and J. S. Royse. Volumetric determination of phosphorus in steel and cast iron. - - - - 17, 129
- NOYES, W. A., and J. W. Shepherd. Determination of methane, carbon monoxide, and hydrogen, etc., - - - - 20, 343
- NUTH, G. Action of *p*-amidodimethylaniline on aldehyde (abst.), 7, 230
- OBERHOLTZER, V. See Smith, E. F.
- ODLING, W. See Crookes, W.
- OECHSNER DE CONINCK, W.  $\beta$ -Lutidine derivatives of brucine (abst.), 6, 36 : Lutidine of coal tar (abst.), 6, 82 : Detection and determination of bases of the pyridine and quinoline series (abst.), 7, 292 : Nature and properties of alkaloids (abst.), 8, 23
- OECHSNER DE CONINCK, W., and J. C. Essner.  $\beta$ -Lutidine derivative of brucine (abst.), 6, 36 : On isomerism in the pyridine series (abst.), - - - - 6, 83
- OEHLER, H. See Claus, A.
- OETTEL, F. Volumetric determination of fluorine (abst.), 9, 10 : Analysis of German silver (abst.), - - - - 10, 64
- OGIER, J. Heat of formation of hydrogen silicide (abst.), 1, 487 : Heat of formation of ethyl silicate (abst.), 1, 487 : Hydrochloride of phosphine (abst.), 2, 88 : Heat of formation of phosphine hydrobromide and hydriodide (abst.), 2, 89 : Vapor-density of pyrosulphuryl chloride (abst.), 4, 78 : New oxychloride of sulphur (abst.), - - - - 4, 231
- OGLIALORO, A. Characteristic reactions of picrotoxin (abst.), - 1, 339
- OHNMAIS, K. See Krüss, G.
- OISHI, H. On Japanese camphor oil (abst.), - - - 6, 313
- O'NEAL, E. A. See Howe, J. L.

- OPPENHEIM, F. See Pflüger, E.
- ORDONNEAU, C. Composition of spirits of wine (abst.), - - - 8, 58
- ORLOWSKI, A. Determination of cadmium in presence of copper (abst.), 4, 167 : Determination of cuprous compounds in presence of cupric (abst.), - - - - - 4, 167
- ORTLIEB, J., and A. Muller. Solvay process for production of potassium carbonate (abst.), - - - - - 4, 74
- OSBORNE, T. B. The proteids of the kidney bean (*Phaseolus vulgaris*), 16, 633, 703, 757 : Proteids of the rye kernel, 17, 429 : The proteids of barley, 17, 539 : Chemical nature of diastase, 17, 587 : Amount and properties of the proteids of the maize kernel, 19, 525
- OSBORNE, T. B., and G. F. Campbell. Chemical nature of diastase, 18, 536 : Proteids of malt, 18, 542 : Proteids of the potato, 18, 575 : Legumin and other proteids of the pea and the vetch, 18, 583 : Conglutin and vitellin, 18, 609 : Proteids of lupin seeds, 19, 454 : Effect of minute quantities of acid on the solubility of globulin in salt solutions, 19, 482 : Proteids of the sunflower seed, 19, 487 : Proteids of the cow pea, 19, 494 : Proteid of the white podded adzuki bean, 19, 509 : Proteids of the pea, 20, 348 : Proteids of the lentil, 20, 362 : Proteids of the horse bean, 20, 393 : Proteids of the vetch, 20, 406 : The proteids of the pea, lentil, horse bean, and vetch, 20, 410 : Proteids of the soy bean, - - - 20, 419
- OSBORNE, T. B., and C. L. Voorhees. The proteids of the wheat kernel, 16, 524 : The proteids of cottonseed, - - - 16, 778
- OSER, J., and W. Kalmann. New indicator for acidimetry (abst.), 4, 166
- O'SHEA, L. T. History of the constitution of bleaching powder (abst.), - - - - - 5, 237
- OSMOND, F. See Witz, G.
- OSSIKOVSKY, J. Cinnamic aldehyde obtained by pancreatic digestion of fibrine (abst.), 2, 368 : Constitution of tyrosine and skatole (abst.), - - - - - 2, 368
- OST, H. Pyromeconic acid (abst.), 1, 294, 490 : Determination of sugars by copper potassium carbonate solution (abst.), - 12, 226
- OSTERMAIER, H. See Friedländer, P.
- OSTERSETZER, O. Apparatus for direct determination of carbon dioxide (abst.), - - - - - 10, 67
- OSTWALD, W. Methods of estimating chemical affinity (abst.), 1, 497 : On chemical energy, - - - - - 15, 421
- O'SULLIVAN, C.  $\gamma$ - and  $\beta$ -Amylan (abst.), 4, 143 : Estimation of starch (abst.), 6, 44 : Arabic acid, composition, etc. (abst.), 6, 87
- OTTO, R. Formation of sulphonic acids from sulphones (abst.), 1, 293 : Preparation of hydrogen sulphide in toxicological investigations (abst.), 1, 293, 378, 393 : Synthesis of the so-called alkylsulphoxides (abst.), 4, 176 : Formation of sulphones from alkyl-sulphonated acids (abst.), 7, 203 : Eukairite from Rioja, Argentine Republic (abst.), 12, 224 : Ethoxyacrylic acid from  $\alpha$ -dichloropropionic acid (abst.), 12, 227 : Behavior of

- sodium phenyl mercaptide with isobutylene bromide (abst.), 12, 229
- OTTO, R., and H. Beckurts. Pyrocinchonic acid and dichloradipic acid from  $\alpha$ -dichlorpropionic acid (abst.), - - - 8, 35, 36
- OUDEMANS, A. C., Jr. Contributions to knowledge of quinamine (abst.), - - - - - 2, 176
- OWEN, F. A. Method of determining indigotin for commercial purposes, - - - - - 10, 178; 13, 32
- PAAL, C. Action of acetyl chloride on benzaldehyde in presence of zinc dust (abst.), 5, 133 : Acetylacetone (abst.), - 7, 147
- PABST, J. A. Continuous process for preparation of ethyl acetate (abst.), - - - - - 2, 366
- PACKARD, R. L. Aluminum, - - - - - 15, 221, 276
- PADÉ, L. See Dubois, C.
- PAGENSTECHE, A. Contributions to knowledge of angelic and tiglic acids, - - - - - 1, 240
- PALM, R. Precipitation and estimation of digitaline, etc. (abst.), 6, 42 : Detection and determination of lactic acid (abst.), 9, 16 : Detection of small quantities of albumin (abst.), 9, 37 : Determination of albumin according to Milton and Commaille (abst.), 9, 47 : Determination of protein compounds in milk (abst.), 9, 48 : Character of peptones and the separation of albumin from the same (abst.), - - - - - 10, 157
- PAMMEL, E. E. See Bennet, A. A.
- PANAOTOVITS, W. Synthesis of anthraquinone (abst.), 7, 32 : *p*-Methylisatoic acid and its derivatives (abst.), - - - 7, 144
- PAPASOGLI, G. See Bartoli, A.
- PAPE, C. See Baeyer, A.
- PARKER, C. E. Safety attachment for riders, - - - - - 16, 764
- PARKER, C. L. Our present knowledge of argon, with a partial bibliography, - - - - - 19, 124
- PARKS, N. See Smith, A. W.
- PARMENTIER, F. Silico-molybdic acid (abst.), 4, 77 : On a hydrate of molybdic oxide (abst.), - - - - - 5, 118
- PARNELL, E. W. Action of nitrates on alkaline sulphides (abst.), 6, 142
- PARR, S. W. Sodium peroxide as a third group reagent, 19, 341 : See also Caldwell, G. C.
- PARRY, J. Spectroscopic examination of iron etc. (abst.), - 6, 232
- PARSONS, C. C. Method of drying sensitive organic substances, 19, 388
- PARSONS, C. L. The Le Sueur process for the electrolytic production of sodium hydroxide and chlorine, - - - - - 20, 868
- PARSONS, H. B. Method for proximate analysis of plants (abst.), 2, 220
- PASTEUR, L. Virulent diseases; and especially the disease called chicken cholera, 2, 79 : Chicken cholera: study of the conditions of non-recidivation and other characteristics, etc., - 2, 214
- PASTROVICH, P. On artificially colored claret wines (abst.), 5, 23
- PATRIE, G. Researches on sulphines (abst.), - - - - - 10, 82

- PATTINSON, J. Volumetric determination of manganese (abst.), 1, 327: Determination of arsenic in copper (abst.), 4, 167: International methods of sampling and testing (abst.), 6, 32: Rate at which bleaching-powder loses its available chlorine (abst.), 10, 90: Testing of lard for cotton-seed oil and beef stearin (abst.), - - - - - 10, 182
- PAVEC, A. Volumetric determination of phosphoric acid (abst.), 1, 356
- PAVY, F. W. Volumetric estimation of sugar (abst.), 1, 109: Volumetric estimation of glucose (abst.), 1, 341: The physiology of the carbohydrates in the animal system (abst.), - - - 6, 159, 233
- PAWLEWSKI, B. Velocity of reactions (abst.), 2, 368: Critical temperatures of liquids (abst.), 4, 264: Facts about paraffin (abst.), 12, 157
- PAWLOW, D. Tetramethylethylene and its derivatives, and the chemical structure of pinacone (abst.), - - - - - 2, 54
- PAYKULL, G. See Bäckström, H.
- PAYNE, G. F. Mineral constituents of the watermelon, - - - 18, 1061
- PAYNE, H. L. Correction, - - - - - 16, 112
- PEACOCK, J. C. See Trimble, H.
- PEASE, F. N. See Dudley, C. B.
- PECHMANN, H. VON, and W. Welsh. Formation of pyridine derivatives from malic acid (abst.), - - - - - 7, 117
- PECKHAM, S. F. The asphalt question, - - - - - 17, 55
- PEIRCE, B. O. Emission spectrum of halogen compounds of mercury (abst.), - - - - - 1, 374
- PEIRCE, GERTRUDE K. See Smith, E. F.
- PELLET, H. Carbonated cupric solution for estimation of glucose (abst.), 1, 344: Determination of the crystallizable sugar in the beet, - - - - - 16, 266
- PELLET, H., and J. de Grobert. Colorimetric estimation of salicylic acid (abst.), - - - - - 4, 189
- PELLET, H. See also Robinet, E.
- PELLIZZARI, G. Amidobenzoic acid derivatives of succinic, sebacic, and phthalic acids (abst.), - - - - - 7, 202
- PEMBERTON, H., JR. Volumetric determination of phosphoric acid, (abst.), 4, 164: Determination of phosphoric acid by titration of the yellow precipitate with alkali, 15, 382: Education of industrial chemists, 15, 627: Determination of phosphoric acid, 16, 278: Determination of phosphoric acid, - - - - - 17, 178
- PENFIELD, S. L. Volumetric determination of fluorine (abst.), 1, 113, 539: Chemical composition of triphylite (abst.), - - 1, 391
- PENNEY, M. D. Amount of alumina in flour (abst.), - - - 1, 110
- PENNINGTON, MARY E. Derivatives of columbium and tantalum, 18, 38
- PENZOLDT, F., and E. Fischer. Reaction of aldehydes (abst.), - 5, 239
- PERGER, H. VON. Constitution of  $\alpha$ -diamidoanthraquinone, etc., (abst.), 1, 491: Determination of morphine in opium (abst.), 7, 33
- PERKIN, A. G. Some derivatives of diphenyleneketone oxide (abst.), 5, 100: See also Hummel, J. J.

- PERKIN, W. H. Analysis of organic bodies containing nitrogen (abst.), 2, 352: Action of acetyl chloride on fumaric acid (abst.), 4, 221: Rotary polarization under magnetic influence (abst.), 4, 257: Luminous incomplete combustion of ether, etc. (abst.), 4, 259: Preparation of diphenyleneketone oxide (abst.), 5, 93, 121: On some diazo derivatives of nitrobenzyl cyanide (abst.), - 5, 96
- PERKIN, W. H., Jr. Condensation products of oenanthaldehyde (abst.), 5, 94: Condensation products of isobutaldehyde (abst.), 5, 94: Action of ethylene bromide on ethyl malonate (abst.), 6, 83: Some derivatives of hydrindonaphthene (abst.), 6, 160: On the existence of the trimethylene ring (abst.), - - - 7, 32
- PERKIN, W. H. Jr., and G. Bellenot. *p*-Nitrobenzoylacetic acid (abst.), - - - - - 7, 31
- PERKIN, W. H., Jr. See also Baeyer, A.
- PERKINS, F. P. Conduct of ammonia test in potable waters (abst.), 1, 565: Analysis of butter-fat (abst.), 1, 568: Determination of nitrates and nitrites in water, as ammonia (abst.), - - - 4, 163
- PERRET, E. Determination of tannin in vegetable substances (abst.), 6, 35
- PERREY, A. See Hautefeuille, P.
- PERRY, N. W. Fusion, casting, etc., of iridium (abst.), - - - 7, 66
- PETER, A. M. Changes in official methods of soil and ash analyses, 16, 792
- PÉTER, [M.] Action of oils on polarized light (abst.), - - - 9, 176
- PETERMANN, A. Remarks on Mohr's article on determination of reverted phosphoric acid (abst.), 7, 179: Assimilation of atmospheric nitrogen, - - - - - 12, 145
- PETERS, K. Linoleic acid (abst.), - - - - - 8, 230
- PETRI, C. Contributions to the knowledge of fumaric and maleic acids (abst.), - - - - - 1, 236
- PETRI, J. Spectroscopic detection of ergot in flour (abst.), - - - 1, 340
- PETRI, R. Chemistry of chondrine (abst.), - - - - - 1, 397
- PETRIEFF, M. Double decomposition dependent on atomic weight (abst.), 6, 128: Purification of bone oil (abst.), - - - 6, 136
- PETERSSON, O. Determination of carbon dioxide (abst.), - - - 12, 354
- PETERSSON, O., and A. Smitt. Determination of free and combined carbon in iron or steel (abst.), 12, 352: New method for determination of carbon in iron and steel, - - - - - 15, 213
- PETTIGREW, J. See Mills, E. J.
- PFAUNDLER, L. Determination of vapor-densities (abst.), - - - 1, 170 377
- PFLÜGER, E., D. Finkler, and F. Oppenheim. Method for elementary analysis of nitrogenous substances (abst.), - - - 1, 336
- PFORDTEN, O. VON DER. Reduction of molybdenum compounds (abst.), 5, 51: Determination of phosphoric acid (abst.), 5, 52: Absorbent for oxygen (abst.), - - - - - 7, 177
- PHILIPP, J. On tungsten bromides (abst.), - - - - - 4, 266
- PHILIPP, O. See Fischer, B.
- PHILLIPS, F. C. A form of silver obtained in the reduction of the sulphide by hydrogen, 16, 700: Occurrence of hydrogen and methane

- in the atmosphere, 17, 801 : Evolution method for determination of sulphur in white cast iron, 17, 891 : Determination of sulphur in cast iron, 18, 1079 : Lubricants for glass stop-cocks, 20, 678 : Occurrence of hydrogen sulphide in the natural gas, etc., - 20, 696
- PHILLIPS, W. B. Rate of reversion in superphosphates, 6, 224 : Reversion of phosphoric acid by heat, etc., - - - 6, 229
- PHILLIPS, W. B., and D. Hancock. Commercial analysis of bauxite, 20, 209
- PHIPSON, T. L. Coloring-matter of *Palmella cruenta* (abst.), 1, 403 : Chemical phenomena of respiration of plants (abst.), 6, 232 : Determination of phosphoric acid in contaminated waters (abst.), 9, 174
- PICARD, P. Determination of glucose in blood (abst.), - - - 1, 351
- PICKERING, S. U. Molecular weight of basic ferric sulphate (abst.), 5, 100 : Note on a basic ammonium copper sulphate (abst.), 5, 231 : Heat of hydration of salts (abst.), 6, 189 : Modifications of sodium sulphate (abst.), 7, 28 : On the heats of dissolution of the sulphates of potassium and lithium (abst.), 7, 52 : Calorimetric determinations of magnesium sulphate (abst.), - - - 7, 52
- PICTET, A. On quinoline and lutidine (abst.), - - - 4, 272
- PIGEON, N. Oil of malt, - - - - - 7, 22
- PILLITZ, W. Analysis of the Zsadányer meteorite (abst.), - 1, 86
- PINNER, A. Condensation of acetone (abst.), 4, 268 : Behavior of hydrocyanic acid and of ethylenecyanide to hydrochloric acid and alcohol (abst.), 5, 123 : Action of phenylhydrazine upon the imidoethers (abst.), 6, 235 : Action of hydroxylamine upon the imidoethers and the amidines (abst.), - - - 6, 236
- PINNOW, J. See Will, W.
- PITKIN, L. Compound platينات and a new platinum potassium salt, 1, 472 : The chlorobromplatينات of potassium, 2, 196 : Isomorphous salts and fractional crystallization, 2, 408 : Action of cold concentrated sulphuric acid on lead and its alloys, 5, 219 : Action of concentrated sulphuric acid, at 100°, on lead and its alloys, 5, 224 : Efficiency of porous porcelain filters, 9, 22 : Solubility of alumina residues from baking powders in gastric juice, 9, 27 : Influence of tartrates and lactates on the digestion of albuminoids, 12, 394 : Alum phosphate baking powders, - 12, 452
- PITMAN, J. R. Action of sulphuric acid on mercury, - - 20, 100
- PLACEWAY, L. A. See Bennett, A. A.
- PLAGEMANN, A. Action of amines on dichloronaphthoquinone (abst.), 4, 265
- PLANCHON, V. Determination of glycerol by oxidation (abst.), - 10, 197
- PLANTA, A. VON, and E. Schulze. A new crystallizable carbohydrate (abst.), - - - - - 12, 352
- PLATT, C. Qualitative examination of acetanilide, 18, 142 : Separation of alkaloidal extracts, 18, 1104 : Normal urine, 19, 382 : See also Griffith, A. B.
- PLIMPTON, R. T. Some halogen compounds of acetylene (abst.), 5, 29, 58
- PLIMPTON, R. T., and E. E. Graves. Estimation of the halogens in volatile organic compounds (abst.), - - - 5, 96

- PLUGGE, P. C. Decomposition of mercuric cyanide by dilute acids (abst.), 1, 556: Separation of the alkaloids of opium (abst.), 9, 176: A reaction of narceine (abst.), - - - - 9, 177
- POLIS, A. Cubic alum and the accommodation of chrome alum (abst.), 2, 370: Aromatic lead compounds (abst.), - - - 10, 39
- POLLARD, W. See Seubert, K.
- POLSTORFF, K. Action of potassium ferricyanide on morphine (abst.), 2, 97: Action of potassium ferricyanide on methylmorphine iodide (abst.), 2, 98: Action of benzoyl chloride on morphine (abst.), 2, 98: See also Broockmann, K.
- PONCY, C. DE. See Caillol de Poncy, O.
- POND, F. J., and F. T. Beers. Derivatives of eugenol, - - - 19, 825
- PONOMAREFF, J. Ethyl cyanate and cyanurate (abst.), 4, 267: Constitution of allantoxanic acid (abst.), - - - - 6, 135
- POOL, F. V. New form of dropping flask, - - - - 7, 20
- POOLE, H. Determination of fat and casein in feces, 19, 877: Determination of undigested fat and casein in infant feces, - - 20, 765
- POPE, F. J. Volumetric estimation of lead, 18, 737: Estimation of sulphides in calcium carbide, - - - - 18, 740
- POPPER, A. Decomposition of solutions of hypochlorous acid and of chlorine in sunlight (abst.), - - - - 7, 120
- POPPER, R. Determination of precipitates without filtration, etc. (abst.), - - - - 1, 84
- PORTER, J. H. The Porter-Clark process (abst.), - - - 6, 103
- POSEN, E. Note on amidohydrocinnamic (phenylamidopropionic) acid (abst.), - - - - 1, 243
- POST, J. Action of sulphuric acid on phosphates, especially calcium phosphate, with respect to manufacture of superphosphates (abst.), 2, 96: Composition of manganese peroxide produced by the Weldon process (abst.), 2, 96: Oxidation of manganous hydroxide with respect to the regeneration of manganese dioxide (abst.), - 2, 96
- POST, J., and E. Hardtung. Action of sulphuric acid on isomeric nitramido- and diamidobenzenes (abst.), - - - - 2, 95
- POTILITZINE, A. Relation of speed of reaction and atomic weight (abst.), 6, 128: On the hydrates of cobalt chloride, etc. (abst.), 6, 307
- POTTER, W. R. Recent theories of the sulphuric acid process, - 14, 24
- POUCHET, A. G. Detection of medicinal and poisonous substances in saliva (abst.), - - - - 1, 402
- POWER, F. B. Analysis of mineral spring at Rosheim in Alsatia (abst.), - - - - 1, 491
- PRAETORIUS-SEIDLER, G. Cyanamide (abst.), - - - - 1, 496
- PRATT, J. W. Soldering and repairing platinum vessels (abst.), 7, 150
- PRECHT, H. Volumetric determination of potassium (abst.), 1, 536: Volumetric determination of magnesium (abst.), - - 1, 564
- PREIS, R., and B. Raymann. Action of iodine on aromatic compounds (abst.), 1, 393: Contributions to knowledge of cholesterine (abst.), 1, 394: Some dichromates (abst.), - - - - 2, 369

PREIS, K. See also Raymann, B.

- PRESCOTT, A. B. Aluminates of potassium and sodium in solution, 2, 27; Zinc oxide in alkaline solutions, 2, 29; Silver ammonium oxide in solution, 2, 32; Proportion of nitrogen found in grain and flour of different varieties of wheat, 2, 333; Analyses of vinegar, 2, 335; Test limits in examination of sugar for injurious metals, 2, 337; Estimation of nicotia in tobacco, 2, 338; Estimations of arsenic in wall paper, etc., 2, 339; Examinations of pickles for copper, 2, 340; The chemistry of nitrogen as disclosed in the constitution of the alkaloids, 9, 128; The immediate work in chemical science, 14, 190; Note on the recovery of arsenic, 14, 223; Recent advances in analytical chemistry, 15, 376; Closing address before the World's Congress of chemists, 16, 867; The periodides, 17, 775; Notes on a few pyridine alkyl iodides, 18, 91; Peter Collier (obituary), 18, 748; Alkyl bismuth iodides and bismuth iodides of vegetable bases, - - - 20, 96
- PRESCOTT, A. B., and S. H. Baer. Pyridine alkyl hydroxides - 18, 247
- PRESCOTT, A. B., and H. M. GORDIN. Certain alkaloidal periodides and the volumetric estimation of alkaloids, etc. - 20, 706
- PRESCOTT, A. B., and P. F. Trowbridge. Periodides of pyridine 17, 859
- PRESCOTT, A. B. See also Baer, S. H., Flintermann, R. F., Gordin, H. M., and Knox, J. W. T.
- PREUSSER, J. Determination of tungsten in tungsten alloys (abst.), 11, 53
- PROCHAZKA, G. A. Probable occurrence of norwegium in American lead, 2, 213; Action of phthalic anhydride on gallic acid - 4, 296
- PROCHAZKA, G. A., and H. Endemann. Notes upon chicle - 1, 50
- PROCHAZKA, G. A. See also Endemann, H.
- PROCTER, H. R. Weselsky's reaction for phoroglucinol (abst.), 1, 338; Titration of free acid in tan liquors (abst.), 1, 367; Some improvements in the estimation of tannins (abst.), 6, 98; On the qualitative determination of tanning materials - 16, 247
- PROKOFIEFF. Analogies between boron and vinyl (abst.), - 6, 158
- PRUNIER, L. Hydrocarbons obtained from American petroleum (abst.), - - - 1, 384
- PRUNIER, L., and R. David. Hydrocarbons from American petroleum (abst.), - - - 1, 277
- PRUNIER, L., and E. Varenne. Substances contained in coke from petroleum (abst.), - - - 2, 435
- PUCKNER, W. A. Improved Gooch crucible, 15, 710; Estimation of caffeine - - - 18, 978
- PUF AHL, O. Arseniomolybdic acid (abst.), - - - 6, 286
- PURDIE, M. Chemical composition of milk of porpoise (abst.), 7, 290
- PURGOTTI, E. Tincture of guaiacum as reagent for copper (abst.), 1, 528
- QUANTIN, H. Volumetric determination of sulphates (abst.), - 12, 72
- QUINAN, C. Convenient burette clamp, - - - 16, 719
- QUINAN, W. R. Physical aspects of argon. The ideal thermometrical substance for high temperatures, - - - 17, 477



- QUINCKE, G. Imperviousness of glass to gases, - - - 1, 91
- RADCLIFFE, T. Analysis of rock-salt from Saltville, Virginia, 4, 255 :  
Analysis of deposit of zinc oxide in a blast-furnace at Longdale,  
Virginia, - - - - - 4, 256
- RADIGUET. See Tommasi, D.
- RADZISZEWSKI, B. Some new glyoxalines (abst.), - - - 5, 242
- RAHT, A. Notes on cupro-manganese, - - - - 1, 43
- RAIMAN, E. The fat contained in cochineal (abst.), - - - 8, 66
- RAMDOHR, L. Preparation of charcoal for gunpowder (abst.), - 9, 190
- RAMMELSBURG, C. Determination of lithium as phosphate (abst.),  
1, 106 : Precipitation of lithium as phosphate (abst.), 1, 335: Ves-  
bium and norwegium (abst.), 2, 224 : Vanadium salt from soda  
liquors (abst.), 4, 73 : Gay-Lussite in soda liquors (abst.), 4, 73 :  
On the sesquicarbonate of potassium (abst.), - - - 5, 66
- RAMSAY, W., and J. T. Cundall. Oxides of nitrogen (abst.), - 7, 200
- RAMSAY, W., and S. Young. Decomposition of ammonia by heat  
(abst.), 6, 73 : Method of determining vapor pressures (abst.), 7, 53
- RAMSAY, W. See also Evans, F. P.
- RAOULT, F. M. Composition of the alkaline permanganates (abst.), 8, 272
- RASINSKI, F. Fractional distillation in current of steam as a means  
of investigating naphtha (abst.), - - - - 7, 33
- RAU, A. Teachings of chemical valence, etc. (abst.), - - - 2, 291
- RAU, H. M. Methods of indigo testing, 7, 16 : On the estimation of  
tannins, - - - - - 9, 52
- RAVE, P., and B. Tollens. Lactone from levulinic acid and formalde-  
hyde, - - - - - 15, 708
- RAVE, P. See also Tollens, B.
- RAWLING, C. Q. Note on a molding sand, - - - - 17, 502
- RAWLINS, L. Ultramarine (abst.), - - - - 9, 210
- RAWSON, C. Remarks on methods of indigo testing (abst.), - 7, 211
- RAWSON, S. G. Test for tannic acid (abst.), - - - - 10, 182
- RAYMANN, B. On isodulcite (abst.), - - - - 9, 111
- RAYMANN, B., and K. Preis. Action of iodine on aromatic com-  
pounds with long side chains (abst.), - - - - 2, 369
- RAYMANN, B. See also Preis, K.
- RAYNAUD, H. Determination of glycerol in wine (abst.), 2, 364 : See  
also Suillots, H.
- RECOURA, A. See Berthelot, M.
- REDWOOD, B. On viscosimetry (abst.), - - - - 8, 109
- REESE, A. See Michaelis, A.
- REESE, C. L. Petroleum inclusion in quartz crystals, - - - 20, 795
- REESE, L. Determination of ash (abst.), - - - - 10, 68
- REFORMATSKY, S. Hydrocarbon,  $C_8H_{14}$ , obtained from allyldiethyl-  
carbinol (abst.), - - - - - 6, 135 ; 7, 60
- REGELSBERGER, F. F. Compounds of uranyl chloride with ammonia  
(abst.), - - - - - 7, 121
- REGNARD, P. See Bert, P.

- REICHARDT, E. Free carbonic acid in potable water and its effect on leaden pipes (abst.), - - - - - 10, 71
- REICHER, L. T. On the velocity of saponification (abst.), - - - - - 8, 83
- REICHERT, E. Simplified method of testing butter (abst.), - - - - - 1, 86
- REIDEMEISTER. Gay-Lussite in crude soda lyes (abst.), - - - - - 4, 73
- REIFSNYDER, S. K. See Shimer, P. W.
- REIMANN, M. Chromium black on wool (abst.), - - - - - 1, 290
- REINHARDT, C. An alcohol lamp with constant level (abst.), 6, 99 :  
On the numbering of porcelain crucibles (abst.), 6, 99 : Melting-point of fats (abst.), - - - - - 8, 86
- REINHARDT, H., and W. Staedel. Methylating and ethylating of aniline and toluidine (abst.), - - - - - 5, 64
- REINHERZ, H. See Birnbaum, K.
- REINITZER, B. Error in determination of iron in presence of chromium (abst.), - - - - - 4, 166
- REINKE, J. Reducing properties of living cells (abst.), - - - - - 4, 176
- REISENEGGER, H. Compounds of the hydrazines with ketones (abst.), 5, 239
- REITMAIR, O. See Stutzer, A.
- RÉMONT, A. Determination of total nitrogen in manures containing nitrates (abst.), 1, 279, 356 : Analysis of heavy mineral, fatty, and resin oils, etc. (abst.), 2, 433 : Determination of salicylic acid (abst.), - - - - - 5, 118
- REMSEN, I. Oxidation of substitution products of aromatic hydrocarbons (abst.), 1, 115, 283 : Action of alcohol on diazo-compounds (abst.), 7, 148 : Oxidation of sulphamine-*m*-toluic acid (abst.), 2, 369
- REMSEN, I., and R. D. Coale. On sinapic acid (abst.), - - - - - 6, 167
- REMSEN, I., and C. Fahlberg. Oxidation of substitution products of aromatic hydrocarbons: oxidation of *o*-toluenesulphamide (abst.), 2, 221
- REMSEN, I., and M. W. Iles. Oxidation of xylenesulphamides (abst.), - - - - - 1, 116, 283
- REMSEN, I., and E. H. Keiser. Behavior of carbon monoxide with air and moist phosphorus (abst.), - - - - - 6, 75
- REMSEN, I., and H. N. Morse. Oxidation of brom-*p*-ethyltoluene (abst.), - - - - - 1, 284
- RENARD, A. Products of distillation of colophony (abst.), 4, 233 : Propionic acid (abst.), 8, 275 : Determination of indigo on the fibre (abst.), - - - - - 9, 16
- RENNIE, A. G. See Mills, E. J.
- RENNIE, E. H. Action of ethyl chlorocarbonate on benzene in presence of aluminum chloride (abst.), 4, 143 : Benzylphenol and some of its derivatives (abst.), 4, 143 : Benzylphenol and its derivatives (abst.), - - - - - 4, 204
- RETTIE, T. Compounds of metallic hydroxides with iodine, - - - - - 19, 333
- REVERDIN, F., and E. Nölting. The alpha and beta positions in naphthalene (abst.), - - - - - 2, 94, 132
- REVERDIN, F. See also Monnet, P.

- REYCHLER, A. History of ammonium silver compounds (abst.), - 6, 73
- REYER, E. Solidification (abst.), - - - - 7, 244
- REYNOLDS, J. E. Apparatus for liquefaction of ammonia (abst.), 4, 220
- RHOUSOPOULOS, O. Some quinoline derivatives (abst.), 5, 52: Action of quinoline on chloroform and iodoform (abst.), - - - 5, 66
- RIBAN, J. Transformation of starch into glucose by cold water (abst.), 1, 271: Camphor of Borneo (abst.), 1, 277: Determination of phosphine (abst.), 1, 372: Combination of phosphine with cuprous chloride, and its determination in gaseous mixtures (abst.), 1, 386: Transformation of tricalcium phosphate into phosphorus oxychloride (abst.), - - - - 5, 120
- RICCIARDI, L. Analysis of a volcanic ash from Mt. Etna (abst.), 4, 232: Composition of ashes from Vesuvius (abst.), 4, 237: Composition of ripe and unripe bananas (abst.), - - - 4, 272
- RICE, C. Answer to O. Hesse (abst.), 1, 162: Apparatus for determining solubilities, - - - - 16, 715
- RICHARD, A. On the pyridine bases (abst.), - - - - 2, 89
- RICHARDS, Ellen H. Carbon dioxide as a measure of the efficiency of ventilation, - - - - 15, 572
- RICHARDS, Ellen H., and J. W. Ellms. The coloring-matter of natural waters, its source, composition, and quantitative measurement, 18, 68
- RICHARDS, J. W. Commercial valuation of lead-tin and lead-antimony alloys, - - - - 16, 541
- RICHARDSON, C. Determination of reverted phosphoric acid (abst.) 4, 163
- RICHARDSON, G. M. Professor August Kekulé (obituary), 18, 1107: Victor Meyer (obituary), - - - - 19, 918
- RICHARDSON, H. A. See Gill, A. H.
- RICHE, A. Waters of the Bourboule (abst.), - - - - 2, 431
- RICHMOND, H. D. The river Nile, 15, 34, 84: Accuracy in analysis of dairy products, 15, 579: See also Hehner, O.
- RICHTER, M. Titration of potassium dichromate (abst.), - - 4, 165
- RICHTER, V. VON. Cinnoline derivatives (abst.), - - - 5, 239
- RICHTERS, T. Method of mixing gases in the leaden chamber process (abst.), - - - - 4, 73
- RICKETTS, P. DE P. Detection of glucose in cane-sugar, and exact determination of cane-sugar by the polariscope, - - - 1, 2
- RIDEAL, S. See Green, A. G.
- RIEDEL, C. Constitution of nitrosodimethyl-*m*-toluidine (abst.), 2, 171
- RIETH, R. Formulae for mixing a solution of desired strength (abst.), 6, 43
- RIGAUT, A. See Lescoeur, H.
- RIGBY, J. S. Conversion of lime mud into cement (abst.), - 10, 91
- RIGGS, W., and R. Giebertmann. Determination of silicon and phosphorus in iron and steel (abst.), - - - - 1, 104
- RILLIET, A. See Ador, E.
- RIMMINGTON, F. M. Pepper adulteration and analysis (abst.), 10, 70
- RINDELL, A., and F. Hannin. Kjeldahl method for nitrogen determinations (abst.), - - - - 8, 81

- RIS, C. Derivatives of di- $\beta$ -naphthylamine (abst.), - - - 9, 193
- RIS, C., and A. Weber. Derivatives of  $\beta$ -dinaphthylamine (abst.), 6, 237
- RISING, W. B., and V. Lenher. Electrolytic method for the determination of mercury in cinnabar, - - - 18, 96
- RITTHAUSEN, H. Occurrence of citric acid in seeds of leguminous plants (abst.), 7, 30: Melitose in cotton-seed, - - - 7, 30
- RITTHAUSEN, H., and F. Weger. Betain in cotton-seed cake (abst.), 7, 58
- RITZA, B. Camphor from *Ledum palestre* (abst.), - - - 6, 95
- RJABININ, C., and A. Saytzeff. Diallylisopropylcarbinol (abst.), - 2, 177
- ROBBS, C. E. See Muir, M. M. P.
- ROBERT, W. See Brunner, H.
- ROBERTS, W. C., C. R. A. Wright, and A. P. Luff. Chemistry of lesser-known alkaloids (abst.), - - - 1, 552
- ROBINET, E., and H. Pellet. Antiseptic properties of salicylic acid (abst.), - - - 4, 238
- ROBINSON, A. E., and C. F. Mabery. Composition of mineral waters in Northwestern Pennsylvania, - - - 18, 915
- ROBINSON, F. C. Constant level apparatus, - - - 16, 405
- ROBINSON, H. Atomic weight of cerium (abst.), - - - 6, 306
- ROBINSON, H. H. See Japp, F. R.
- ROBINSON, N. Sources of error in methods of determining potash in fertilizers, etc., - - - 16, 364
- ROCQUES, X. Action of water on zinc tanks and lead pipes (abst.), 2, 432
- RODATZ, P. See Stohmann, F.
- RÖDER, F. Synthesis of vinaconic acid (abst.), 7, 81: See also Fittig, R.
- RÖDIGER, W. Detection of rosin oil or paraffin oil in lard, etc. (abst.), 4, 192
- ROEMER, H. Anthracylamine (abst.), - - - 4, 230
- ROSMER, H., and W. Link. Nitramido- and oxymethyl-anthraquinone (abst.), 5, 240: Amidomethylanthranol (abst.), - - - 5, 241
- ROEMER, H. See also Schunck, E.
- ROESLER, L. Method for analysis of wines (abst.), - - - 4, 189
- RÖSSLER, C. Volumetric determination of manganese (abst.), 1, 329: Lead assay in wet way (abst.), - - - 7, 62
- RÖSSLER, O. Detection of minute quantities of carbon dioxide and other gases (abst.), - - - 9, 200
- ROHDE, G. See Miller, W. von.
- ROLFE, G. W., and G. Defren. The hydrolysis of starch by acids, 18, 869: Notes on an analytical investigation of the hydrolysis of starch by acids (note), 19, 261: Hydrolysis of starch by acids. An apology (note), - - - 19, 679
- ROLFE, G. W., and W. A. Faxon. Exact estimation of total carbohydrates in acid hydrolyzed starch products, - - - 19, 698
- ROLL, G., and O. Hölz. Benzyl ethers of brominated nitrophenols, and their behavior on reduction (abst.), - - - 7, 245
- ROLLET, A. Determination of sulphur in iron, etc. (abst.), - 1, 560
- ROMANIS, R. Molecular volume of some double chlorides (abst.), 6, 232
- ROMIG, C. See Anschütz, R.

- ROSCOE, SIR H. E. Study of earth-metals contained in samarskite (abst.), 4, 222: Atomic weight of carbon by combustion of diamond (abst.), - - - - - 4, 237
- ROSCOE, SIR H. E., and A. Schuster. Spectrum of terbium (abst.), 4, 223
- ROSCOE, SIR H. E., and T. E. Thorpe. Absorption spectrum of bromine and iodine monochlorides, - - - - - 1, 95
- ROSELL, C. A. O. The ferrates, - - - - - 17, 760
- ROSENBLADT, T. Determination of boric acid (abst.), 9, 11: Separation of mercury and palladium from each other, and from lead, copper, and bismuth (abst.), - - - - - 9, 12
- ROSENFELD, M. Lecture experiments (abst.), 4, 205: See also Hönig, M.
- ROSENSTIEHL, A. On article of E. and O. Fischer, on constitution of rosaniline (abst.), 1, 271: Constitution of salts of rosaniline and analogous coloring-matters (abst.), - - - - - 2, 366, 431
- ROSENSTIEHL, A., and M. Gerber. Homologous and isomeric rosanilines (abst.), 4, 237: On the probable number of homologous and isomeric rosanilines (abst.), - - - - - 6, 191
- ROSER, W. Terebenthic acid (abst.), - - - - - 4, 227
- ROSS, B. B. Direct estimation of citrate-soluble phosphoric acid, 16, 304: Recent work on the sugars, 16, 549, 670: Analytical methods involving the use of hydrogen dioxide, - - - - - 18, 918
- ROSSI, A. J. New process for the manufacture of artificial ice, P. 1, 2, 74: Cyprien, M. Tessié du Motay (obituary), 2, 305: Titanium in blast-furnaces, 12, 91: Eugène Melchior Peligot (obituary), 12, 128: On blast-furnace slags and the fusibility of silicates, 12, 189, 307: The calculation of blast-furnace slags, - - - - - 12, 443
- ROSSOLYMO, A. See Gattermann, L.
- ROTH, C. F. Apparatus for determining melting-points (abst.), 8, 278: See also Ladenburg, A.
- ROTH, D. M. See Norton, T. H.
- ROTTEN, M. Preparation of soluble magnesia soaps (abst.), - - - - - 8, 64
- ROUSSEAU, G. Diatomic alcohol derived from  $\beta$ -naphthol (abst.), 4, 77: Action of chloroform on  $\beta$ -naphthol (abst.), - - - - - 4, 241
- ROUSSEAU, G., and B. Bruneau. Preparation of barium permanganate (abst.), - - - - - 6, 77
- ROUX, L. Preparation of a propyl- and an amyl-naphthalene (abst.), 6, 164: Action of aluminum chloride upon bromo-, chloro- and iodonaphthol (abst.), 8, 94: See also Barbier, P.
- ROYSE, J. S. See Noyes, W. A.
- RUBE, Dr. On the estimation of nitrogen (abst.), - - - - - 6, 96
- RUBNER, M. Formation of fat from carbohydrates in carnivora (abst.), 8, 86
- RUDOLPH, C. *o*-Nitrobenzaldehyde and its behavior towards nascent hydrogen (abst.), 2, 366: See also Fischer, O.
- RUEDIGER, A. P. See Cady, H. P.
- RÜDORFF, F. Simple form of volumenometer (abst.), 1, 379: Determination of specific gravity of powdered bodies (abst.), 1, 395:

- Determination of moisture in the air (abst.), 2, 171 : Constitution of solutions (abst.), - - - - - 12, 351
- RÜGHEIMER, L. Artificial piperine (abst.), 5, 28 : See also Ladenburg, A.
- RUFACH, C. W. See Weigelt-Rufach, C.
- RUFFLE, J. Determination of total nitrogen by combustion (abst.), 1, 542 : Estimation of oxides of nitrogen as ammonia (abst.), 4, 160
- RUF, H. See Bondzynski, S.
- RUNYAN, E. G., and H. W. Wiley. Determination of small quantities of phosphoric acid by the citrate method, - - - - - 17, 513
- RUPP, W. On  $\beta$ -phenanthroline monosulphonic acid, - - - - - 6, 155
- RUSSELL, W. H., and W. Lapraik. Spectroscopic study of chlorophyll (abst.), - - - - - 4, 257
- SAARBACH, L. Phenoxypropionic acid (abst.), 1, 296 : Simple form of gas regulator, - - - - - 18, 511
- SABANÉEFF, A. Action of sulphuric acid on oleic acid (abst.), - 8, 85
- SABATIER, P. Numerical laws of the solid state (abst.), - 6, 73
- SABIN, A. H. A new form of air thermometer for technical purposes, 12, 277
- SACC, F. Cucurbitaceae of Uruguay (abst.), 4, 236 : Chemical studies of products of Uruguay (abst.), - - - - - 4, 237
- SACHSSE, R. Determination and formula of starch (abst.), 1, 546 : New coloring-matter derived from chlorophyll (abst.), - - 6, 133
- SADTLER, S. P., and H. G. McCarter. Petrocene (abst.), - 1, 114
- SAEGER, O. See Kühn, B.
- ST. MARTIN, L. DE. Intensity of respiration processes in a super-oxygenated atmosphere (abst.), - - - - - 6, 129
- SAKURAI, J. Metallic compounds containing bivalent hydrocarbon radicals (abst.), 4, 258 : Note on methylene chloriodide (abst.), 7, 214
- SALAMON, A. G. See Hood, J. J.
- SALKOWSKY, E. Examination of cod liver oil and vegetable oils (abst.), - - - - - 10, 70
- SALKOWSKY, E. and H. Salkowsky. Formation of hydrocinnamic acid by pancreatic digestion (abst.), 1, 166 : Products formed by putrefaction of albumin (abst.), - - - - - 2, 174
- SALKOWSKY, H. Behavior of *m*-nitroanisole towards ammonia (abst.), 1, 169 : See also Salkowsky, E.
- SALOMON, G. Paraxanthine (abst.), 5, 65 : See also Krause, H.
- SANDS, F. See Elliott, A. H.
- SANFORD, P. G. Gelatine explosives, - - - - - 15, 552
- SARAUW, A. Action of phosgene on diazoamido compounds (abst.), 4, 175
- SARRAU, E. and P. Vieille. Decomposition of gunpowder in closed vessels (abst.), 1, 399 : Heat of formation of guncotton (abst.), 2, 435
- SARGENT, G. W. See Smith, E. F.
- SAUER, A. Krakatoa ashes in 1883 (abst.), - - - - - 6, 127
- SAUER, E. New form of air-bath, 16, 31 : New laboratory apparatus, 17, 494
- SAUNDERS, W. M. Amphoteric reaction of milk - - - - - 18, (33)
- SAYTZEFF, A. Oxidation of oleic acid by permanganate in alkaline solution (abst.), 7, 207 : Oxidation of oleic and elaidic acids with

- permanganate in alkaline solution (abst.), 8, 42: See also  
Rjabinin, C., Semlianitzin, A., and Schirikoff, A.
- SAYTZEFF, P. and A. Saytzeff. Allyldipropylcarbinol (abst.), - 2, 54
- SCHACHERL, G. See Garzarolli-Thurnlackh, K.
- SCHÄFER, W. Examination of some musts of 1883 for acids and sugar  
(abst.), - - - - - 6, 243
- SCHAEFFER, F. See Nencki, M.
- SCHAEFFER, H. A., and E. F. Smith. Tungsten hexabromide, - 18, 1098
- SCHANKE, H. G. Hydrogen sulphide generator, - - - 16, 868
- SCHATZKY, E. Action of allyl iodide, butyl iodide, and zinc, upon  
acetone (abst.), - - - - - 7, 58
- SCHAUMANN, H. Determination of albumin in urine (abst.), - 10, 197
- SCHEFFER, E. Butter and its substitutes (abst.), - - 8, 276
- SCHEFFER, J. D. R. The diffusion of some organic and inorganic  
compounds (abst.), - - - - - 5, 22
- SCHRIEBE, A. See Wildt, E.
- SCHREIBLER, C. Vanillin in certain unrefined beet sugars (abst.), 2, 368
- SCHERING, E. Potassium iodide containing lead (abst.), - 1, 169
- SCHERTEL, A. Grey modification of tin (abst.), - - - 1, 494
- SCHUCH, F. C. See Stone, W. E.
- SCHREURER-KESTNER, A. Estimation of tartaric acid in argols (abst.),  
1, 102: Oxidation of soda lyes (abst.), 4, 73: Influence of the am-  
monia soda process on the value of hydrochloric acid and chlorine  
(abst.), 6, 174: Notes on the soda industry (abst.), 6, 174: Com-  
position of gaseous products in combustion of pyrites, and in-  
fluence of Glover's tower on manufacture of sulphuric acid (abst.),  
7, 124: Experiments on the industrial value of Thompson's  
calorimeter (abst.), - - - - - 10, 89
- SCHIFF, H. Digallic acid (abst.), 1, 161: Analysis of organic sub-  
stances containing the halogens or nitrogen (abst.), 1, 254, 337:  
Determination of acetyl by means of magnesia (abst.), 1, 547:  
Oxychloride and chlorides of tungsten (abst.), - - - 2, 182
- SCHIRIKOFF, A., and A. Saytzeff. Allyldiethylcarbinol (abst.), 2, 54
- SCHLAGDENHAUFFEN, F. C. Delicacy of reaction for magnesia (abst.), 1, 96
- SCHMID, H. See Goldschmidt, H.
- SCHMIDT, E. Identity of mercurialine with methylamine (abst.),  
1, 100: Contributions to history of methylcrotonic and angelic  
acids (abst.), 1, 396: Contributions to knowledge of daturine  
(abst.), 2, 370: Examination of certain musts for sugar and acid  
(abst.), - - - - - 7, 63
- SCHMITT, C. Detection of Fahlberg's "saccharin" (abst.), - 9, 201
- SCHMITT, C. E. Determination of fatty acids in oils (abst.), - 6, 100
- SCHMITT, R. Constitution of dichlorazophenol (abst.), - - 1, 493
- SCHMITT, R., and A. Goldberg. Action of chloride of lime on ethyl  
alcohol (abst.), - - - - - 1, 496
- SCHMOERGER, M. Isomalic acid (abst.), - - - - - 1, 295

- SCHMUCKER, S. C. Electrolytic separation of the metals of the second group, - - - - - 15, 195
- SCHNEIDER, E. A. See Clarke, F. W.
- SCHNEIDER, R. Behavior of arsenical bismuth with nitric acid, etc. (abst.), 2, 136 : Action of sulphur chloride on silver cyanide (abst.), 7, 201
- SCHÖBER, J. B. Volumetric determination of zinc (abst.), - - - 1, 534
- SCHÖNE, E. Hydrogen peroxide and potassium iodide (abst.), 1, 250 : Estimation of hydrogen peroxide (abst.), 1, 321 : Hydrogen peroxide (abst.), - - - - - 2, 50, 59, 181
- SCHOLVIEN, L. Derivatives of mercury fulminate (abst.), - - - 7, 80
- SCHOOP, P. See Hell, C.
- SCHORLEMMER, C. See Dale, R. S.
- SCHOTT, O. Determination of iodine in varec (abst.), - - - 1, 563
- SCHOTTEN, C. Contributions to knowledge of piperidine (abst.), 4, 262 : Oxidation of piperidine (abst.), - - - - - 5, 133
- SCHREDER, J. See Barth, L. von.
- SCHREINER, L. Boiling-points of ethereal salts of alkyloxy- and hydroxy- acids (abst.), 1, 290 : Boiling-points of esters and ethers of oxacids (abst.), 2, 174 : See also Damm, G.
- SCHRODT, M. Presence of nitrates and nitrites in milk, an evidence of adulteration (abst.), - - - - - 9, 13
- SCHRÖDER, H. Additions to the law of volumes (abst.), 1, 168 : Volume constitution of sulphates, selenates, and chromates of magnesium metals (abst.), - - - - - 1, 492
- SCHRÖDER, M. Indicator for volumetric determination of zinc (abst.), 4, 166
- SCHÜPPHAUS, R. C. Alcohols of fusel oil, - - - - - 14, 45
- SCHÜTT, F. *p*-Brom-*o*-amidophenol (abst.), 7, 246 : Bromamidophenols (abst.), - - - - - 7, 246
- SCHÜTZENBERGER, P. Note on a recent work of B. Aronheim (abst.), 1, 278
- SCHÜTZENBERGER, P., and A. Colson. On silicon (abst.), - - - 4, 240
- SCHULERUD, L. Chromates and dichromates (abst.), - - - 1, 294
- SCHULTZ, G. Constitution of phenanthrene (abst.), 1, 395 ; 2, 45 : See also Anschütz, R.
- SCHULZ, H. Action of mono- and diphenylarsenic acid on the animal organism (abst.), 1, 159 : Action of dimethylarsenic acid on the animal organism (abst.), 1, 160 : The action of acid chlorides and bromides on quinones (abst.), - - - - - 5, 19
- SCHULZ, J. See Frühling, R.
- SCHULZE, B. See Weiske, H.
- SCHULZE, E. Specific rotation of ischolesterin (abst.), 1, 380, 395 : Separation of asparagine from solution (abst.), 5, 63 : Practicability of Schlösing's ammonia estimation process for plant extracts (abst.), 6, 41 : See also Planta, A. von.
- SCHULZE, E., and J. Barbieri. Decomposition of albuminoids in pumpkin seeds (abst.), - - - - - 2, 136
- SCHULZE, H. Lecture experiment (abst.), - - - - - 2, 95
- SCHULZE, K. E. Phorone from glycerol (abst.), 4, 176 : High boiling



- phenols from coal tar (abst.), 7, 120 : Occurrence of carboxylic acids in coal tar (abst.), - - - - - 7, 249
- SCHULZE. See Hartmann.
- SCHUNCK, E., and H. Roemer. Detection of alizarin, isopurpurin, and flavopurpurin, and quantitative determination of alizarin (abst.), - - - - - 2, 95
- SCHUSTER, A. See Roscoe, Sir H. E.
- SCHWAB, J. See Hess, F., and Medicus, L.
- SCHWALB, F. Non-acid components of beeswax (abst.), - - - - - 8, 229
- SCHWANERT, H. Large crystals in urine (abst.), - - - - - 4, 174
- SCHWARTZ, D. See Noyes, A. A.
- SCHWARZ, H. Lecture experiments with zinc dust and sulphur (abst.), 5, 53
- SCHWEINITZ, E. A. VON. Chemical products of bacterial growth and their physiological effects, 13, 61 : See also De Schweinitz, E. A.
- SCHWEITZER, H. New weighing apparatus, - - - - - 15, 190
- SCHWEITZER, H., and E. Lungwitz. New muffle for incineration of sugar, - - - - - 16, 151
- SCHWEITZER, P. Action of impure rain-water on lead pipes, P. 1, 66 : Cause of discrepancies in estimating silver in pig lead, P. 1, 67 : Analysis of the gneiss of Manhattan Island, P. 1, 69 : Some new acid ammonium sulphates, - - - - - P. 1, 88
- SEAL, A. N. Action of acid amides upon benzoin, - - - - - 18, 101
- SEELHEIM, F. On the volatilization of platinum in chlorine gas, - - - - - 1, 479
- SEIDEL, P. Triphenodioxazine by oxidation of orthoamidophenol (abst.), - - - - - 12, 162
- SELL, W. J. Volumetric determination of chromium (abst.), - - - - - 1, 324
- SELM, F. Reaction for strychnine (abst.), 1, 341 : Behavior of strychnine with iodic acid (abst.), 1, 545 : Alkaloids found in the human cadaver (abst.), 1, 554 : Modification of Schneider's process for separation of arsenic in toxicological investigations (abst.), - - - - - 1, 555
- SEMLIANITZIN, A., and A. Saytzeff. Oxyvalerician acid from allyldimethylcarbinol (abst.), - - - - - 2, 178
- SEMMLER, F. W. Indian geranium oil (abst.), - - - - - 12, 234
- SENDERENS. See Filhol, E.
- SENDTNER, R. New uranyl salts (abst.), - - - - - 1, 255
- SENE, A. Cyananiline and some of its derivatives (abst.), - - - - - 7, 207
- SERRANT, E. Rosolene (abst.), - - - - - 8, 56
- SESTINI, F. Determination of albuminoids in food for cattle (abst.), 1, 565 : Response to the reclamation of Vincent and Delachanal (abst.), - - - - - 6, 37
- SETTEGAST, H. Contributions to quantitative spectrum analysis (abst.), - - - - - 1, 374
- SEUBERT, K. Atomic weight of iridium (abst.), - - - - - 1, 320
- SEUBERT, K., and K. Kobbé. Constitution of some double salts of rhodium (abst.), - - - - - 12, 472
- SEUBERT, K., and G. Link. Analyses of nephrites from lake dwellings (abst.), - - - - - 4, 206

- SEUBERT, K., and W. Pollard. Vapor-density and melting-point of cyanogen iodide (abst.), - - - - - 12, 225
- SEXTON, A. H. Determination of arsenic in copper (abst.), - - - - - 4, 167
- SEYDA, A. Sulphonic acids of quinol (abst.), - - - - - 5, 239
- SEYFERT, F. Starch iodide (abst.), - - - - - 10, 188
- SEYLER, C. A. On the determination of the number of atoms in a molecule (abst.), - - - - - 6, 47
- SHARP, J. Some of the modes of treating cotton goods practiced by Lancashire and Yorkshire dyers (abst.), - - - - - 6, 142
- SHARWOOD, W. J. Notes on estimation of cyanogen by silver nitrate, 19, 400
- SHAW, S. On the preparation of pentathionates (abst.), - - - - - 5, 233
- SHEARER, A. See Giles, W. W.
- SHENSTONE, W. A. Alkaloids of *Nux vomica*, (II). Brucine (abst.), 5, 95; Modified Liebig's condenser (abst.), 5, 97; Experiments on strychnine (abst.), - - - - - 7, 116
- SHENSTONE, W. A., and J. T. Cundall. Influence of temperature on the composition of hydrated calcium sulphate (abst.), - - - - - 10, 78
- SHEPARD, C. U. Development and extent of the fertilizer industry, 15, 321
- SHEPHERD, J. W. See Noyes, W. A.
- SHERMAN, H. C. Determination of nitrogen in fertilizers containing nitrates, 17, 567; Insoluble carbohydrates of wheat - - - - - 19, 291
- SHIMER, P. W. Carbon in steel (report), 15, 283; Determination of iron by titration with stannous chloride (report), 15, 396; Determination of silica in blast-furnace slag, 16, 501; Determination of zinc, 17, 310; Determination of graphite in pig iron - - - - - 17, 873
- SHIMER, P. W., and S. K. Reifsnyder. Some experiments on sampling by quartation, 15, 260; See also Drown, T. M.
- SHIMIDZU, T. See Divers, E.
- SHIMOSÉ, M. Separation of selenium and tellurium, and their preparation from lead-chamber deposit (abst.), 6, 47; See also Divers, E.
- SHINN, O. L. See Smith, E. F.
- SHIVER, F. S. Standardization of sulphuric acid - - - - - 17, 351
- SHOCK, H. L. See Starke, F. W.
- SHOREY, E. C. Two sources of error in sugar house analyses, 18, 462; The principal amide of sugar-cane, 19, 881; The lecithins of sugar-cane, 20, 113; Additional notes on the sugar-cane amide, 20, 133
- SIEBER, N. Antiseptic action of acids (abst.) - - - - - 1, 496
- SIEGFRIED, C. A. Note on Bütschli's experimental imitation of protoplasm - - - - - 12, 298
- SIEGFRIED, L. See Albert, H.
- SIEGFRIED, M. Oxidation of phenol by means of nitrobenzene (abst.), - - - - - 7, 207
- SIENIER, A., and G. Lowe. Test for glycerol (abst.) - - - - - 1, 339
- SILBER, P. See Ciamician, G. L.
- SILLIMAN, B. Dr. John Lawrence Smith (obituary), - - - - - 5, 228
- SILVA, R. D. On the synthesis of diphenylethane (abst.), - - - - - 6, 191

- SIMAND, F. Estimation of tannin (abst.), 4, 195; On the examination of tanning extracts (abst.), - - - - - 6, 196
- SIMON, S. E. Compounds of lithium chloride and magnesium chloride with alcohols (abst.), 2, 135: Preparation of alizarin-orange (abst.), - - - - - 5, 20
- SIMON, W. Models for illustrating the relationship between gas volumes and molecular weights, - - - - - 15, 542
- SIMONS, F. D. Action of certain bodies on the digestive ferments 19, 744
- SKALWEIT, J. Polariscopes test in beer analysis (abst.), 1, 363: Testing essential oils for adulterations (abst.), 1, 368: Distinguishing between natural and artificial butter by means of the refractometer (abst.), - - - - - 9, 14
- SKRAUP, Z. H. Oxidation products of quinine (abst.), 1, 395: Composition of cinchonine (abst.), 2, 184: Oxidation products of cinchonine (abst.), 2, 185: Quinoline derivatives (abst.), 5, 25: On the synthesis of alkaloids (abst.), - - - - - 7, 78
- SKRAUP, Z. H., and G. Vortmann. Contributions to knowledge of cinchonidine (abst.), - - - - - 2, 184
- SLATER, C. See Muir, M. M. P.
- SLOANE, T. O'C. Precipitation and purification of barium sulphate, 3, 37: Test for carbon disulphide and carbon dioxide in coal gas, 3, 38: Methyl violet test paper, 4, 31: Fat extracting apparatus, 4, 250: Notes on electrolytic separation of metals, - - - - - 13, 140
- SLOCUM, F. L. Formation of phenylangelic and phenylmethacrylic acids, etc. (abst.), - - - - - 7, 143
- SLOOTEN, W. VAN. Analyses of air - - - - - 1, 263
- SMETHAM, A. Examination of roasted coffee (abst.), - - - - - 4, 189
- SMITT, A. See Pettersson, O.
- SMITH, A. W. Vinegar analysis and some characteristics of pure cider vinegar, - - - - - 20, 3
- SMITH, A. W., and N. Parks. Composition of Ohio wines, - - - - - 20, 878
- SMITH, B. E. Preparation of diethylnaphthylamine (abst.), 4, 200; Action of sulphuric acid on diethylnaphthylamine (abst.), 4, 201; Action of carbon oxychloride on naphthylamine (abst.), - - - - - 4, 201
- SMITH, E. E. Determination of fat and casein in feces - - - - - 20, 101
- SMITH, E. F. Determination of phosphorus in cast iron P. 1, 58; New monochlorodinitrophenol and an aniline derivative of  $\alpha$ -monochlorodinitrophenol, P. 2, 111: Beryllium borate, P. 2, 114; A new base (abst.), 1, 285: Electrolytic determination of cadmium (abst.), 1, 331: Detection of iron by means of salicylic acid (abst.), 1, 335: Electrolytic estimation of cadmium (abst.), 1, 391: New results in electrolysis (abst.), 2, 43: A new base (abst.), 2, 94: Electrolytic separation, 16, 93: Professor Theodore George Wormley (obituary), 19, 275; Action of sulphur monochloride on minerals, - - - - - 20, 289
- SMITH, E. F., and H. C. Burr. Attempt to prepare molybdenum hexachloride, - - - - - 16, 577

- SMITH, E. F., and H. L. Dieck. A crystalline chromium tungstate, 15, 151
- SMITH, E. F., and H. B. Harris. Electrolytic determination of ruthenium, 17, 652: Action of phosphorus pentachloride upon the dioxides of zirconium and thorium, - - - 17, 654
- SMITH, E. F., and J. G. Hibbs. Action of hydrochloric acid gas upon sodium vanadate, 16, 578: Action of hydrochloric acid gas upon salts of the elements of group V of the periodic system - 17, 682
- SMITH, E. F., and V. Lenher. Action of ammonia gas on molybdenyl chloride, - - - - 15, 61
- SMITH, E. F., and P. Maas. Atomic weight of molybdenum - 15, 397
- SMITH, E. F., and J. M. Matthews. Uranium oxynitride and uranium dioxide - - - - 17, 686
- SMITH, E. F., and F. L. Meyer. Action of haloid acids in gas form upon the salts of elements of group V of the periodic system, 17, 735
- SMITH, E. F., and J. B. Moyer. Electrolytic separation of mercury from bismuth, 15, 28: Electrolytic separations - - 15, 101
- SMITH, E. F., and V. Oberholtzer. Action of the haloid acids upon molybdic acid, 15, 18: Action of gases upon metallic molybdenum and tungsten, - - - - 15, 206
- SMITH, E. F., and Gertrude K. Peirce. Products from nitration of metachlorsalicylic acid (abst.), 1, 288: Products of nitration of metachlorsalicylic acid (abst.), - - - - 2, 94
- SMITH, E. F., and G. W. Sargent. Action of phosphorus pentachloride upon molybdenum trioxide - - - - 16, 425
- SMITH, E. F., and O. L. Shinn. Action of ammonia gas on wolframyl chloride, 15, 68: Action of molybdenum dioxide upon silver salts, 16, 569
- SMITH, E. F., and H. E. Spencer. Electrolytic separations, - 16, 420
- SMITH, E. F., and D. L. Wallace. Electrolytic separation of copper from antimony, 15, 32: Double bromides of palladium, 16, 465: Electrolytic separations, 17, 612: Electrolytic estimation of mercury, 18, 169: Electrolytic determinations, - - - - 20, 279
- SMITH, E. F. See also Atkinson, Elizabeth, A., Benkert, A. L., Field, C., Hibbs, J. C., Kelley, J., Lenher, V., Schaffer, H. A., Starke, F. W., Taggart, W. T., and Wallace, D. L.
- SMITH, E. L. Rapid measuring pipette, - - - - 18, 905
- SMITH, I. J. See Norton, T. H.
- SMITH, J. D. See Teschemacher, E. F.
- SMITH, J. G. See Herty, C. H.
- SMITH, J. H. See Lunge, G.
- SMITH, R. A. Detection of fire-damp (abst.), - - - - 1, 367
- SMITH, W. Color reactions for aromatic hydrocarbons, etc. (abst.), 1, 544: Note on pentathionic acid in connection with Shaw's paper (abst.), 5, 234: Analysis of tars recovered in coking of coal, and in condensation of fuel gases from blast furnaces (abst.), 6, 25: Examination of tar from Sutherland's gas producers (abst.), 6, 31: By-products obtained in coking coal in the Simon-Carvès ovens (abst.), 7, 212: On wool and fur (abst.), - - - 10, 184

- SMITH, W., and G. W. Davis. Compounds of naphthalene and benzene with antimony trichloride (abst.), 5, 60 : On the constitution of quinoline (abst.), - - - - - 5, 61
- SMITH, W., and T. Liddle. Loss of soda by formation of Gay-Lussite (abst.), - - - - - 4, 74
- SMITH, W., and T. Takamatke. Pentathionic acid (abst.), - - - - - 4, 199
- SMITH, W. See also Claparède, A.
- SMITH, W. F. Cider and vinegar, - - - - - 7, 102
- SMITHELLS, A. Some fluorine compounds of uranium (abst.), - - - - - 5, 97
- SMITT, A. See Petterson, O.
- SNYDER, H. Error in the determination of nitrogen by the Kjeldahl method, 13, 212 : Notes on Löwenthal's method for determination of tannin, 15, 560 : Notes on the Grandeau method for the determination of humus in soils, 16, 210 : Action of organic and mineral acids upon soils, 17, 148 : The composition of humus, - - - - - 19, 738
- SOHON, M. D. Electrical laboratory stove, - - - - - 19, 790
- SOLLY, R. H. Crystallographic examination of antimony potassium chlorobromide (abst.), - - - - - 5, 114
- SOMMARUGA, E. VON. Molecular weight of indigo (abst.), - - - - - 1, 254
- SOMMER, A. Review of the methods of preparing hydrobromic acid, etc. (abst.), 6, 32 : Converting sulphides into sulphates by means of nitric and hydrobromic acids (abst.), - - - - - 6, 33
- SOMMERKORN, H. New method to determine specific gravity of a liquid (abst.), - - - - - 2, 171
- SONDÉN, K. Hygienic analysis of air (abst.), - - - - - 9, 219
- SONNENSCHN, A. Drying of fats (abst.), - - - - - 8, 279
- SORABJI, K. B. New paraffins (abst.), - - - - - 7, 66
- SORET, J. L. Ultra-violet absorption spectrum of liquids (abst.), - - - - - 1, 94
- SOROKINE, V. Oxidation of diallyl, and the hexyl glycol derived from it (abst.), - - - - - 1, 272
- SOUBEIRAN, J. L. An *Irvingia* from Cochin China, and the fatty matter contained (abst.), - - - - - 8, 110
- SOUTHWORTH, R. I. Relations of volumes of solutions of hydrated salts to their water of composition (abst.), - - - - - 1, 392
- SOXHLET, F. Reducing effect of different kinds of sugar on alkaline copper solutions (abst.), 1, 342 : Gravimetric determination of fat in milk (abst.), 1, 358 : Testing milk for addition of water (abst.), - - - - - 8, 232
- SPENCER, A. E. See Dennis, L. M.
- SPENCER, G. L. Air drying oven, 15, 82 : Notes on caffeine, - - - - - 19, 279
- SPENCER, H. E. See Smith, E. F.
- SPENZER, J. G. Behavior of allylmalonic, allylacetic, and ethylidene-propionic acids when boiled with caustic soda solutions, - - - - - 17, 1
- SPEYERS, C. L. Heats of solution of some carbon compounds, 18, 146 : Some thoughts about liquids, 18, 724 : Molecular weights of some carbon compounds, a few words more, 20, 546 : Osmotic pressure, 20, 579
- SPIEGEL, L. Determination of nitric acid, etc. (abst.), - - - - - 12, 353

- SPIEGELBERG, L. Nitro-, amido-, and bromobenzenesulphonic acids (abst.), 2, 186 : See also Heinzelman, R.
- SPILKER, A. See Kraemer, G.
- SPITZER, F. V. Camphor chlorides (abst.), - - - - 2, 60
- SPRING, W. Formation of alloys by pressure (abst.), 4, 269 : Expansion of alums (abst.), 5, 27 : Formation of arsenides by pressure (abst.), 5, 68 : Heat disengaged by the compression of solid bodies (abst.), 6, 190 : Quantities of sulphides found by compressions of their elements (abst.), 6, 190 : Differential dilatometer and its use in examinations on formation of alums (abst.), 7, 77 : Expansion of alums (abst.), 7, 77 : Specific heat of alloys of lead and tin (abst.), 8, 197 : A new acid of tin (abst.), - - - 10, 187
- SPRING, W., and G. de Boeck. On an oxide of manganese soluble in water (abst.), 9, 99 : A colloidal copper sulphide (abst.), - 9, 110
- SPRING, W., and E. Bourgeois. Formation of sulphuric acid during the preparation of dithionic acid (abst.), - - - 8, 177
- SPRING, W., and A. Lecrenier. Relative activity of the halogen derivatives of sulphur (abst.), 8, 164 : On the constitution of the chlorinated ethyl bisulphide of Guthrie (abst.), 10, 15 : Action of chlorine on the sulphides of alcohol radicals (abst.), - - 10, 16
- SPRING, W., and C. Winssinger. Action of chlorine on sulphonic compounds, etc. (abst.), 4, 263 : Action of chlorine on organic sulphur compounds (abst.), - - - - 6, 133
- SPRINGER, A. On glychocolic ether (abst.), 1, 289 : A tribute to Pasteur (obituary), 17, 1000 : Analyses of distilled waters, - 20, (46)
- SQUIBB, E. R. Determination of alkaloids in cinchona bark (abst.), 4, 193 : Assay of opium (abst.), 4, 194 : Absolute alcohol, 15, 126 : Automatic zero burette, 16, 145 : Improvement in the manufacture of acetone, 17, 187 : Manufacture of acetone and acetone-chloroform from acetic acid, 18, 231, (30) : Volumetric determination of acetone, 18, 1068 : Improved specific gravity bottle or pycnometer, 19, 111
- STAATS, G. Derivatives of *o*- and *p*-toluidine (abst.), - - - 2, 171
- STÄDEL, W. Halogen substitution products of ethane (abst.), - 1, 246
- STÄDEL, W. and E. Hahn. Apparatus for regulation of pressure in distillations, etc. (abst.), - - - - 1, 250
- STÄDEL, W. See also Reinhardt, H.
- STAHL, J. C. Apparatus for determination of fluidity of mineral oils (abst.), - - - - 8, 85
- STAHL, K. F. Hydrofluoric acid, - - - - 18, 415
- STAHL-SCHMIDT, C. Contributions to knowledge of polyporic acid (abst.), - - - - 1, 258
- STARKE, F. W., H. L. Shock, and E. F. Smith. Constitution of arsenopyrite, - - - - 19, 948
- STAS, J. S. Preparation of pure hydrobromic acid (abst.), - - 8, 81
- STAVELEY, W. W. A new alkali process (abst.), - - - 10, 183
- STEBBINS, J. H., JR. A new thiourea compound, 1, 415 : New azo-

- colors, 1, 465 : Action of benzotrichloride on primary amines, 1, 524 : Some new azo-compounds (abst.), 2, 95 : Action of bromanile on secondary and tertiary monamines, 2, 109 : Substituted tolyl compounds, 2, 199 : New coloring-matters, produced by the action of diazo-compounds on phenols, 2, 236 : Some new azo-colors, 2, 446 : New azo-colors belonging to the tetrazo group, 3, 20 : A slight modification of the Wilkinson eudiometer, 3, 36 : Some new facts concerning thymole sulpho-acid, and some of its salts, 3, 103 : New salts of alpha-thymole sulpho-acid, etc., 3, 110 : Combination of diazo-compounds with alpha-thymole sulpho-acid, 3, 112 : Preparation of artificial indigo and some of its derivatives, 4, 81 : Analysis of galena from Newburyport, Mass., 4, 214 : Analysis of pyrrhotite from Clayton, New York, 4, 214 : Action of phthalic anhydride on gallic acid, 4, 244 : Action of diazoanisole chloride upon phenols, 5, 32, 55 : Spectra of azo-colors, 6, 117, 149 : Action of diazo- $\beta$ -naphthalene on phenols, 6, 151 : Spectroscopic examination of Lauth's violet and methylene blue, 6, 304 : New green coloring-matter from benzylmethylaniline, 7, 40 : Benzylmethylaniline, 7, 42 : Estimation of nitrogen in aromatic compounds by the Kjeldahl method, 7, 108 : "Lalande-Spence" primary battery, 7, 195 : Preliminary notice upon the action of benzaldehyde on commercial xyloidine, 8, 173 : On the efficacy of Breyer's "micro-membrane" filter, 8, 192 : A new method of estimating coloring-matter in butter and its substitutes, 9, 41 : Relative value of different pepsin tests, 10, 51 : Action of sulphuric acid on hydrochinon, etc., 13, 155 : Examination of an unusual form of spring water, 14, 115 : Estimation of potassium iodide and sodium acetate in complex organic mixtures, - - - 16, 157
- STEIN, G. Determination of water in Turkey-red oil (abst.), - - - 1, 367
- STEINER, J. Ammoniacal copper test of Pavy (abst.), - - - 1, 547
- STELLWAY, A. Composition of barley fat (abst.), - - - 8, 274
- STEPHENS, C. W. Determination of milk sugar in milk (abst.), - - - 8, 205
- STERN, D. Hydrazobenzene and benzidine (abst.), - - - 7, 59
- STEUDEMANN, H. *m*-Nitrophenyl mustard oil (abst.), - - - 5, 128
- STILLMAN, T. B. Analysis of lubricating oils, 15, 265 : Chemical and physical examination of Portland cement, 15, 181 : 16, 161, 283, 323, 374 : Solubility of bismuth sulphide in sodium sulphide, etc., 18, 683 : Action of nitric acid upon aluminum and the formation of aluminum nitrate, - - - 19, 711
- STILLWELL, C. M. Occurrence of vanadium in American hematites, etc., P. 1, 84 : Estimation of precipitated or reduced phosphoric acid in superphosphates, - - - P. 2, 64
- STILLWELL, C. M., and T. S. Gladding. Acetate of lime, manufacture, and analysis, - - - 4, 94
- STINGL, J. Technical valuation of quick-lime (abst.), - - - 1, 559
- STINGL, J., and T. Morawski. Recovery of sulphur from sulphur dioxide and hydrogen sulphide (abst.), - - - 2, 289

- STOCKMEIER, H. Adulteration of linseed oil with rosin oil, etc. (abst.), 8, 28
- STODDARD, J. T. Demonstration of the flashing-point of kerosene, 5,  
53 : New balance for first year's work in general chemistry, - 18, 189
- STODDARD, W. W. Logwood test for alum in bread (abst.), 1, 566 :  
New pepper adulterant (abst.), - - - - - 10, 195
- STOHMANN, F. Calorimetric method (abst.), 1, 295 : Thermo-chemical relations of the acids and alcohols of the aliphatic series (abst.), 8, 82
- STOHMANN, F., and P. Rodatz. Heat of combustion of the fatty acids (abst.), - - - - - 8, 83
- STOKES, A. W. Asbestos tiles for combustion furnaces (abst.), 10, 68
- STOKES, A. W., and R. Bodmer. Determination of mixtures of milk sugar and cane-sugar (abst.), - - - - - 7, 149
- STOKES, H. N. Metaphosphinic acids, 18, (90): Chloronitrides of phosphorus, 19, (43): Metaphosphinic acids, - - - - - 20, (67)
- STOKLASA, J. Estimation of water in superphosphates (abst.), 12, 412
- STOLBA, F. Lead oxalate for standardizing permanganate (abst.), 1, 586
- STOLBA, [M.] Determination of alkali in silver nitrate (abst.), - 4, 165
- STONE, G. C. Determination of zinc as pyrophosphate, 4, 26 : Volumetric determination of zinc, and a new indicator for ferrocyanide, 17, 473 : Remarks on Auchy's paper on the volumetric determination of manganese, 18, 230, (30): Probable production of permanganate by direct combustion of manganese, 18, 230, (30): Solubility of bismuth sulphide in alkaline sulphides, - - - - - 18, 1091
- STONE, G. C., and D. A. Van Ingen. Ferrocyanides of zinc and manganese, - - - - - 19, 542
- STONE, W. E. Carbohydrates of the sweet potato (abst.), 12, 351 : Relation of teaching to research in chemistry, 15, 665 : Comparison of methods for the determination of starch, 16, 726 : Quantitative determination of carbohydrates in food-stuffs, - - - - - 19, 183, 347
- STONE, W. E., and W. H. Baird. Occurrence of raffinose in American sugar beets, - - - - - 19, 116
- STONE, W. E., and F. C. Scheuch. Method for determining calcium oxide in quicklime, - - - - - 16, 721
- STONE, W. E., and H. E. Wright. Notes on taka-diastase, - 20, 639
- STORCH, L. Action of ammonium salts on glycerol (abst.), - 8, 273
- STRASBURGER, J. On *p*-amidofluorene (abst.), - - - - - 6, 86
- STREATFIELD, F. W. See Japp, F. R.
- STRECKER, W. See Lippmann, E.
- STRIEDINGER, J. H. Detonating submerged nitroglycerine compounds by means of concussion, - - - - - P. 1, 2, 2
- STROMAN, A. Crystallized mercurous iodide and bromide (abst.), 9, 209
- STROMEYER, A. Determination of acetic acid in crude pyrolignite of lime (abst.), - - - - - 1, 367, 582
- STUART, C. M. Condensation products formed by benzaldehyde with malonic and isosuccinic acids (abst.), - - - - - 5, 237
- STUART, T. W. The Tees salt industry (abst.), - - - - - 10, 159
- STÜNKEL, C. On daphnetin (abst.), - - - - - 1, 167



- STUTZER, A. Albuminoids (abst.), - - - - - 2, 225
- STUTZER, A., and O. Reitmair. Determination of nitrogen in fertilizers containing nitrates (abst.), - - - - - 9, 13
- STUTZER, J. See Isbert, A.
- SUIDA, W. See Liechti, L.
- SUILLOTS, H., and H. Raynaud. Manufacture of iodoform (abst.), 10, 189
- SUMMERS, B. S. Carbon determinations in pig iron, - - - 18, 1087
- SUTHERLAND, D. A. Note on saccharin (abst.), - - - 9, 217
- SWAIN, R. E. See Young, S. W.
- SZILASI, J. See Grittner, A.
- SZYMANSKI, F. Allylsulphuric acid and some of its salts (abst.), 7, 208 : See also Deichmüller, A.
- TAFEL, J., and C. Enoch. Formation of alkyl derivatives of amides (abst.), - - - - - 12, 159
- TAFEL, J. See also Fischer, Emil.
- TAFTE, H. Detection of salicylic acid in foods (abst.), - - - 9, 15
- TAGGART, W. T., and E. F. Smith. Separation of manganese from tungstic acid, - - - - - 18, 1053
- TAKAMATKE, T. See Smith, W.
- TAKAMINE, J. See Mills, E. J.
- TAKAYAMA, J. On Japanese tea and tobacco (abst.), - - - 6, 312
- TALBOT, H. P., and A. G. Woodman. Analysis of an iron rail taken from a gallery of an unused coal mine, - - - - - 19, 9
- TALBOT, H. P. See also Fay, H.
- TAMM, A. Determination of phosphorus in iron and iron ores (abst.), 6, 193
- TAMMANN, G. Detection and determination of fluorine (abst.), 7, 295
- TANATAR, S. Preparation of dioxyfumaric acid (abst.), 2, 172 ; Maleic and malic acids from  $\alpha$ -dibrompropionic acid (abst.), - - - 2, 172
- TANRET, C. Proximate principles of the bitter orange (abst.), 8, 202 : The sugars of hesperidin and isohesperidin (abst.), - - - 10, 79
- TASSIN, W. New blowpipe reagent, 19, (24) : Preparation of crystals, - - - - - 20, (3)
- TATLOCK, R. R. Determination of nitric nitrogen in guano (abst.), 1, 355
- TATTERSALL, J. New test for papaverine (abst.), - - - 1, 545
- TATTERSALL, T. Test for cobalt (abst.), - - - - - 1, 109
- TENNILLE, G. F. Phosphomolybdic test as applied to lard analysis, 17, 33 : Determination of solid fats in compound lards, - - - 19, 51
- TERNE, B. Legislation on fertilizer analysis, - - - - - 10, 2
- TERREIL, A. Analysis of metallic fragments from Peruvian sepulchres (abst.), 1, 276 : Atomic weight of aluminum (abst.), 1, 277, 321 ; Determination of fusing-points (abst.), - - - - - 1, 375
- TERREIL, A., and A. Wolff. Resin of rose-wood (abst.), - - - 2, 431
- TERREIL, H. Some peculiarities of commercial orpine and on depilation of hides (abst.), - - - - - 8, 97
- TESCHEMACHER, E. F., and J. D. Smith. Estimation of phosphoric acid for commercial purposes (abst.), 1, 353 : Determination of morphine in opium (abst.), - - - - - 10, 45

- TEXTOR, O. See GABBA, L.
- THAYER, E. F. See Cameron, F. K.
- THENARD, P. On black phosphorus (abst.), - - - 4, 272
- THIERCELIN, L. Preparation of ashes for extraction of iodine from seaweeds (abst.), - - - - 2, 434
- THOLLON, L. New compound prism (abst.), - - - - 1, 172
- THOMAS, C. Detection of Bordeaux red in wines (abst.), - - 4, 191
- THOMAS, E. G. P. See Witt, O. N.
- THOMAS, J. W. Analysis of combustible gases (abst.), - - 1, 372
- THOMAS, W. S. Methods for the determination of manganese - 17, 341
- THOMPSON, C. See Wright, C. R. A.
- THOMPSON F. See Campbell, E. D.
- THOMPSON, G. R. See Bothamley, C. H.
- THOMPSON, W. P. The patent law (English) as amended in 1883 (abst.), 6, 26 : On Rave's process for the utilization of acid tar residues of petroleum manufacturers (abst.), - - - 10, 93
- THOMSEN, J. Thermochemical investigations (abst.), 1, 293 : Action of hydrogen sulphide on cupric salts (abst.), 1, 332 : Heat of formation of cuprous chloride (abst.), 2, 171 : Heat of formation of cyanogen (abst.), 2, 171 : [Refraction and heat of combustion (abst.), 4, 176 : Heats of combustion of benzene, dipropargyl and acetylene : constitution of benzene (abst.), - - - 4, 229
- THOMSEN, T. Researches on the composition of wood (abs.), 1, 295 ; Optical rotation of malic acid, etc. (abst.), - - - 4, 263
- THOMSON, A. C. Substitute for gas in blast-lamp (abst.), - - 1, 91
- THOMSON, J. A new antiseptic soap (abst.), - - - 10, 92
- THOMSON, J. M., and W. P. Bloxam. Crystallization from saturated solutions of compound salts (abst.), - - - - 4, 261
- THOMSON, J. S. Preparation of distilled water free from ammonia (abst.), - - - - 1, 586
- THOMSON, R. T. Use of rosolic acid, methyl orange, etc., as indicators (abst.), - - - - 6, 49, 242
- THOMSON, W. See Allen, A. H.
- THORÉ, New saccharimeter (abst.), - - - - 1, 92
- THORNE, L. T. Apparatus for fractional distillation under reduced pressures (abst.), 5, 114 : Industrial applications of oxygen (abst.), - - - - 10, 197
- THORPE, T. E. Heptane from *Pinus sabiniana* (abst.), 1, 286 : Zinc, magnesium, and iron, as reducing agents with ferric salts (abst.), 4, 223 ; Action of oxychlorides of sulphur on silver nitrate (abst.), 4, 223
- THORPE, T. E., and S. Dyson. Action of thiophosphoryl chloride on silver nitrate (abst.), - - - - 4, 224
- THORPE, T. E., and J. I. Watts. Specific volume of water of crystallization (abst.), - - - - 2, 350
- THORPE, T. E. See also Roscoe, Sir H. E.
- THRESH, J. C. Estimation of small quantities of alcohol (abst.), 1, 574 : Analysis of Buxton thermal water (abst.), - - - 4, 170

- TIBIRIÇÁ, J. See Merz, V.
- TIDY, C. M. Determination of organic purity of waters (abst.), 1, 106:  
See also Crookes, W.
- TIEMANN, F. Aromatic amido-acids (abst.), 2, 370; Action of hydroxylamine on nitriles (abst.), 6, 160: Behavior of amidoximes and azoximes (abst.), 8, 75: See also Baumann, E., and DeLaire, G.
- TIMCKE T. Action of amines on quinone (abst.), - - - 8, 23
- TLAISNER, F. See Fleissner, F.
- TLINSKI, M. Action of ammonia on nitrosophenols (abst.), 7, 86:  
Separation of nickel and cobalt (abst.), - - - 7, 250
- TOBIAS, G. Behavior of alkaline phosphates towards some indicators (abst.), - - - 5, 53
- TODD, A. M. Treatment and distillation of peppermint plants (abst.), 10, 117
- TÖNNIES, P. Action of nitrosyl chloride on unsaturated hydrocarbons (abst.), - - - 1, 170
- TOLLENS, B. Ammoniacal alkaline silver solution as reagent for aldehyde (abst.), - - - 5, 50
- TOLLENS, B., H. Hosäus, P. Rave, and P. Wigand. Synthesis of polyhydric alcohols by means of formaldehyde - - - 15, 704
- TOLLENS, B., P. Wigand, and P. Rave. Pentaerythrol - - - 15, 706
- TOLLENS, B. See also Allen, E. W., Deichmüller, A., Gunther, A., Herrmann, P., Kent, W. H., and Rave, P.
- TOMICKEK, F. See Brauner, B.
- TOMMASI, D. Determination of ozone in the air (abst.), 4, 162: Heat of formation of soluble fluorides (abst.), 6, 74: Note on non-existence of ammonium hydroxide (abst.), 6, 189: Electrolysis of a few chemical compounds (abst.), - - - 8, 19
- TOMMASI, D., and Radiguet. Battery with elements of coal without metals (abst.), - - - 9, 38
- TOPF, G. Iodometric studies (abst.), - - - 9, 33
- TORNÖE, H. Results of Norwegian North Sea expedition (abst.), - - - 1, 496: 2, 289
- TÓTH, J. Determination of phenol in crude carbolic acid (abst.), - 8, 79
- TRAUB, M. C. Action of phthalic anhydride on quinoline (abst.), 5, 67
- TRAUBE, J. See Bodländer, G.
- TRAUBE, M. Production of active oxygen (abst.), 4, 207; 5, 19:  
Behavior of platinum or palladium towards carbon monoxide or hydrogen in presence of oxygen and water (abst.), - - - 5, 62
- TRESKOW, H. Apparatus for measuring sterilized solutions (abst.), 9, 123
- TREVOR, J. E. Fundaments of chemical theory, 15, 430: The achievements and aims of physical chemistry, - - - 16, 516
- TRIBE, A. See Gladstone, J. H.
- TRIMBLE, H., and J. C. Peacock. Preparation of oak tannins, with special reference to the use of acetone as a solvent, - - - 15, 344
- TROOST, L. Distillation of a heterogeneous liquid (abst.), 1, 401: New compounds of nitric acid and acetic acid with ammonia (abst.),

- 4, 234 : Molecular weight of phosphorus iodides (abst.), 4, 272 :  
 On the oxide of thorium (abst.), - - - - - 7, 285
- TROST, E. Salts of platinum (abst.), 8, 176 : Action of zinc dust on  
 benzyl chloride (abst.), - - - - - 8, 181
- TROWBRIDGE, P. F. Periodides of pyridine, - - - - - 19, 322
- TROWBRIDGE, P. F., and O. C. Diehl. Halides and perhalides of pyri-  
 dine, - - - - - 19, 558
- TROWBRIDGE, P. F. See also Prescott, A. B.
- TRUBEK, M. Estimation of extraction in sugar houses, - - - 17, 920
- TSCHAPLOWITZ, F. Apparatus for estimation of fats (abst.), 1, 586 :  
 New form of volumenometer (abst.), - - - - - 1, 586
- TSCHELTZOFF. Determination of nitrogen in explosives (abst.), - 1, 542
- TSCHERNIAC, J., and R. Hellon. Sulphocyanacetone (abst.), - 5, 122
- TSCHERNIAC, J., and C. H. Norton. Sulphocyanpropimine (abst.), 5, 122
- TSCHERNIAC, J. See also Grimaux, E., and Norton, T. H.
- TSCHIJEWSKY, P. Volatilization of salts on evaporation of solutions  
 (abst.), - - - - - 6, 157
- TSCHIRCH, A. Preparation of pure chlorophyll (abst.), - 6, 89
- TSCHIRIKOFF, A. Analysis of coal (abst.), - - - - - 6, 128
- TUCKER, J. H. Solvent action of carbonic anhydride in solution, 3, 26
- TURNER, F. See Frankland, P. F.
- TURNER, T. Eutexia (abst.), 7, 113 : Influence of silicon on the prop-  
 erties of iron and steel (abst.), - - - - - 10, 159
- TWITCHELL, E. Separation of solid and liquid fatty acids, - 17, 189
- TYPKE, P. G. W. Nitro-derivatives of resorcinol (abst.), - 5, 129
- ULBRICHT, R. Reducing effect of different kinds of sugar on alkaline  
 copper solution (abst.), - - - - - 1, 342
- ULEX, G. Foreign seeds in rape-seed cake (abst.), - - - 4, 193
- UNGER, B. Analysis of vulcanized rubber, etc. (abst.), - - 7, 178
- URECH, F. Action of potassium carbonate on isobutylaldehyde  
 (abst.), 1, 292 : On Lilienfein's lamp, for low boiling petroleum  
 (abst.), 6, 106 : See also Hell, C.
- VALEUR, F. See La Coste, W.
- VANDERPOEL, F. Dropping flask for standard solutions, - 16, 156
- VANGEL, B. Action of dehydrating substances on acids (abst.), - 2, 369
- VAN HASSELT, A. Determination of sodium compounds in potassium  
 carbonate (abst.), - - - - - 4, 165
- VAN INGEN, D. A. See Stone, G. C.
- VAN SLYKE, L. L. Composition of cow's milk, 15, 645 : Composition  
 of American cheddar cheese, 15, 605 : Determination of casein in  
 cow's milk, 15, 635 : Determination of albumen in cow's milk, 16, 712
- VARENNE, E. Researches on the coagulation of egg albumin (abst.),  
 8, 73 : See also Prunier, L.
- VERTCH, F. P. Modifications of the Pemberton method for determin-  
 ing phosphoric acid, - - - - - 18, 389
- VELRY, V. H. Higher oxides of manganese and their hydrates  
 (abst.), 4, 168 : Rate of decomposition of ammonium nitrate (abst.), 5, 235

- VENABLE, F. P. Heptylene from heptane of *Pinus sabiniana*, 4, 22 :  
 Action of alcoholic potash on heptylene bromide, 4, 254 : Heptyl-  
 malonic and heptylacetic acids, 5, 10 : Zinc in drinking water,  
 6, 214 : Analysis of the leaves of *Ilex cassine*, 7, 100 : An exami-  
 nation of the chlorides of zirconium, 16, 469 : Modified arrange-  
 ment of the elements under the natural law, 17, 75 : Chlorides  
 of zirconium, 17, 842 : Early arrangement of the elements, 17,  
 947 : Revision of the atomic weight of zirconium, 20, 119 : Modi-  
 fied air-bath, - - - - - 20, 271
- VENABLE, F. P., and C. Baskerville. Zirconium sulphite, 17, 448 :  
 Oxalates of zirconium, 19, 12 : Oxyhalides of zirconium, - 20, 321
- VENABLE, F. P., and A. W. Belden. Properties of zirconium dioxide,  
 20, 273 : Note on liquid phosphorus, - - - - - 20, 303
- VENABLE, F. P., and T. Clarke. Properties of calcium carbide, 17,  
 306 : Study of the zirconates, - - - - - 18, 434
- VENABLE, F. P., and F. W. Miller. Nature of the change from violet  
 to green in solutions of chromium salts, - - - - - 20, 484
- VERNEUIL, A. Action of iodine on potassium selenocyanate (abst.),  
 6, 34 : Action of non-metals on selenocyanates (abst.), 8, 179 :  
 Preparation of a calcium sulphide with violet phosphorescence  
 (abst.), - - - - - 8, 199
- VERNEUIL, A., and L. Bourgeois. Artificial production of crystallized  
 ferric arsenate (abst.), - - - - - 2, 132
- VERSON, E. *Botrytis bassiana* and its crystalline products, - 16, 860
- VIEILLE, P. See Berthelot, M., and Sarrau, E.
- VIETH, P. Average composition of milk (abst.), 8, 28 : Presence of  
 matter soluble in ether in filter-paper (abst.), 8, 279 : Average  
 composition of milk (abst.), - - - - - 10, 47, 190
- VIGNAL, H. Determination of chromium (abst.), - - - - - 8, 77
- VIGNON, L. Action of water on stannic chloride (abst.), 12, 71 :  
 Technical analysis of water (abst.), 12, 73 : See also Barbier, P.
- VIGNON, P. Separation of iron and aluminum (abst.), - - 7, 124
- VILLE, J. Crystallized zinc hydroxide (abst.), - - - 7, 285
- VILLEJEAN. See Dalcé.
- WILLIERS, A. Oxalic acid (abst.), 2, 430 : On tetranitroethylene bro-  
 mide (abst.), 6, 131 : On nitrated derivatives of ethylene hydride  
 (abst.), 6, 131 : Formation of ptomaines in cholera (abst.), 7, 80 :  
 On pathological urine (abst.), 7, 288 : Detection of sulphites in  
 the presence of thiosulphates and sulphates (abst.), 9, 117 : A new  
 oxacid of sulphur (abst.), - - - - - 10, 76
- VINCENT, C. Nitriles in pyrogenous products from beet root residues  
 (abst.), 1, 277 : Reactions of dimethylamine with metallic solu-  
 tions (abst.), 2, 133 : Three new compounds of rhodium (abst.),  
 7, 283 : Reactions of the aqueous solution of dipropylamine with  
 metallic salts (abst.), - - - - - 8, 201
- VINCENT, C., and J. Chappuis. Action of alcoholic chlorides on  
 ammonia and on methylamines (abst.), - - - 8, 95

- VINCENT, C., and B. Delachanal. Density and coefficient of expansion of methyl chloride (abst.), 1, 271 : Properties of mixtures of methyl cyanide with methyl and ethyl alcohols (abst.), 2, 430 : Tannic acid contained in the berries of the sorbus tree (abst.), 9, 101
- VÖLTZKOW, M. See Liebermann, C.
- VOGEL, H. W. Influence of light on chemical processes (abst.), 1, 93 : Investigations on adulterations of wine (abst.), 1, 578 : New lines in the spectrum of hydrogen, and the dissociation of calcium (abst.), - - - - - 2, 226
- VOGEL, J. H. Thomas slags (abst.), 9, 118 : Determination of phosphoric acid in Thomas slags (abst.), - - - - - 9, 119
- VOLCKENING, G. J. Mechanical arrangement of fat extraction apparatus, - - - - - 19, 735
- VOLHARD, J. Silver titration with ammonium thiocyanate for determination of halogens, copper, and mercury (abst.), - - - 1, 323
- VOLHARD, J., and H. Erdmann. Synthetical production of thiophen (abst.), - - - - - 7, 230
- VOLNEY, C. W. On the decomposition of phosphates by sodium acid sulphate, 7, 238 ; 8, 32 : On the decomposition of sodium nitrate and the distillation of nitric acid, 13, 246 : Composition of barytocelestite, 13, 290 : American lithographic stones, 14, 376 : Apparatus for fractional distillation, - - - - - 16, 160
- VOORHEES, C. L. See Osborne, T. B.
- VORTMANN, G. Identification and determination of chlorine in presence of bromine and iodine (abst.), 2, 368 : See also Lippmann, E., Messinger, J., and Skraup, Z. H.
- VRAU, G. See Bleunard, A.
- VRIJ, J. E. de. Determination of alkaloids in cinchona bark (abst.), 4, 193 : Detection of cinchonidine in quinine sulphate (abst.), 8, 233
- VULPIUS, G. Thallin compounds (abst.), 7, 84 : Almond oil testing (abst.), - - - - - 8, 87
- WAAGE, P. Studies on the ebullioscope (abst.), 1, 572 : See also Guldberg, C. M.
- WADMAN, W. E. Cream of tartar substitutes : their chemistry and analysis, - - - - - 16, 333
- WAGNER, A. Automatic regulator for evaporation, etc. (abst.), 1, 584 : Test for adulteration in butter (abst.), - - - - - 8, 40
- WAINWRIGHT, J. H. Estimation of morphine in opium, 7, 45 : The examination of commercial glycerol, 11, 125 : The Chapman washing-bottle, 13, 126 : Determination of solid fat in artificial mixtures, etc., 18, 259 : Volumetric determination of lead, - - - - - 19, 389
- WAIT, C. E. Analysis of bindheimite, 1, 134 : An earthy ferric sulphate from Arkansas, 4, 61 : Convenient still for the laboratory, 17, 917 : Oxidation of silver, 18, 254 : The occurrence of titanium, 18, 402
- WALDBOTT, S. On the volatility of borax, 16, 410 : On the volatility of sodium fluoride, - - - - - 16, 418
- WALKE, W. Determination of the strength of various high explosives 12, 256

- WALKER, J. See Carnelley, T.
- WALKER, J. F. Ethers of nitrosophenol (abst.), - - - 7, 87
- WALKER, P. H. Use of organic bases in preparation of calcium and barium ferrocyanides, 17, 927 : Applications of hydrogen peroxide to quantitative analysis, - - - - - 20, 513
- WALLACE, D. L., and E. F. Smith. Electrolytic determination of cadmium, - - - - - 19, 870
- WALLACE, D. L. See also Smith, E. F.
- WALLACH, O. Azo dye-stuffs (abst.), 4, 173 : Formation of basic compounds from amides (abst.), 4, 206 : Oxalines and glyoxalines (abst.), 5, 19 : Chemistry of the terpenes and essential oils (abst.), - - - - - 7, 121, 246
- WALLACH, O., and O. Bischof. Decomposition of dichloracrylic acid by alkalis (abst.), - - - - - 1, 163
- WALLACH, O., and W. Brass. *Oleum cynae*. Contribution to knowledge of the terpenes (abst.), - - - - - 7, 122
- WALLACH, O., and A. Kölliker. Action of hydrochloric acid upon amidoazo-compounds (abst.), - - - - - 7, 86
- WALLER, E. Water supply of the city of New York, 4, 15 : Examination of methods of determining phosphorus in iron ores, 4, 88 : Review of papers on analytical chemistry, 4, 160 : Review of papers on analytical chemistry (proximate,) 4, 188 : Precipitation of barium sulphate, 4, 212 : Peculiar reaction with lead acetate, 4, 213 : On the examination of snow water, 6, 187 : Sanitary examinations of some waters, 8, 147 : Examination of butter fat and its substitutes, 8, 155 : Notes on the analysis of zinc ores, 11, 49 : Note on the purification of alcohol, 11, 124 : Determination of lithia in mineral waters, 12, 214 : Experiments in milk analysis, 13, 52 : Note on the action of waters on lead pipe, 13, 176 : Laboratory devices, 16, 869 : See also Chandler, C. F.
- WALTER, J. Hand regulator for projection of spectra by electric light (abst.), - - - - - 7, 141
- WALTZ, G. Propyl- and isopropylsuccinic acids (abst.), - - - 4, 270
- WALZ, I. Occurrence of vanadium in American magnetites, P. 1, 58 : Regularities of color and color-changes, - - - - - P. 1, 128
- WANKLYN, J. A. Gas making by Cooper's lime process, with a method of gas analysis (abst.), 6, 31 : On milk analysis (abst.), 8, 43
- WANKLYN, J. A., and W. C. Cooper. Organic analysis in the wet way (abst.), - - - - - 1, 542
- WANKLYN, J. A. See also Fox, W.
- WARDER, R. B. Determination of caustic alkali in presence of carbonate (abst.), 4, 165 : Speed of dissociation of brass (abst.), 6, 75 : Problems of physical chemistry, 14, 360 : Cross-fertilization of the sciences, - - - - - 15, 601
- WARINGTON, R. Determination of nitric acid as nitric oxide (abst.), 1, 540 : Determination of nitric acid by means of indigo (abst.), 1, 541 : Determination of nitric acid as nitric oxide (abst.), 4, 258 :

- Determination of nitric acid in soils (abst.), 4, 258: Nitrification (abst.), 7, 23: On tests for nitrous and nitric acids (abst.), 7, 61: Behavior of nitrates in Kjeldahl's process (abst.), 7, 290: Chemical actions of some micro-organisms (abst.), 10, 84: See also Grosjean, B. J., and Lawes, J. B.
- WARNECKE, G. See Atwater, W. O.
- WARREN, H. N. Apparatus for preparing sulphurous, carbonic, and phosphoric anhydrides (abst.), 9, 175: Pressure tubes (abst.), 10, 69: Electrolytic method of liquefying gases (abst.), - - 10, 78
- WARREN, T. T. P. B. Water supply to steam boilers (abst.), 10, 172: Sensibility of earth-nut oil to heat when electrified (abst.), 10, 173
- WARTH, C. See Kelbe, W.
- WASON, R. S. See Noyes, A. A.
- WATKINS, W. H. See Noyes, A. A.
- WATSON, W. H. Detection of milk adulteration (abst.), - - 1, 570
- WATTS, F. Determination of carbon and silicon in iron, steel, etc. (abst.), - - - - - 4, 165
- WATTS, J. I. See Thorpe, T. E.
- WAYSS, A. See Gasiorowski, K.
- WEBER, A., and R. Heim. Preparation of aromatic ethereal salts of phosphoric acid (abst.), - - - - - 5, 18
- WEBER, A., and N. Wolff. Perchlorophenol from perchlorobenzene (abst.), - - - - - 7, 228
- WEBER, A. See also Ris, C.
- WEBER, H. A. Note on Aragonite, 1, 79: Notes on certain reactions for tyrotoxinon, 12, 485: Occurrence of tin in canned food, 13, 200: Raphides, cause of acidity in certain plants, 13, 215: Behavior of antiseptics toward salivary digestion, 14, 4: Behavior of coal-tar colors towards the process of digestion, 18, 1092: Root tubercles in water culture, - - - - - 20, 9
- WEBER, H. A., and W. McPherson. Determination of cane sugar in the presence of commercial glucose, 17, 312: Action of acetic and hydrochloric acids on sucrose - - - - - 17, 320
- WEBSTER, C. S. Analysis of certain plant fibres (abst.), 5, 92: Chlorination of pyrogallol (abst.), - - - - - 6, 238
- WEDDIGE, A. Derivatives of *o*-amidobenzamide (abst.), - - 7, 144
- WEDDIGE, A., and M. KÖRNER. A polymeric dichloroacetonitrile (abst.), - - - - - 7, 177
- WEDDING, W. Apparatus for measuring volumes of solids (abst.), 1, 90
- WEGER, F. See Ritthausen, H.
- WEIDEL, H., and G. L. Ciamician. Substances from tar produced by destructive distillation of animal substances (abst.), - - 2, 97
- WEIGELT-RUFACH, C. Determination of extract in wine (abst.), - 7, 63
- WEIGERT, L. Determination of acetic acid in wine (abst.) - - 1, 364
- WEIL, F. Volumetric determination of zinc powder (abst.), - 9, 36
- WEINBERG, A. Oxydiphenyl bases (abst.), - - - - 10, 18
- WEINHOLD, A. Apparatus for distillation of mercury (abst.), - 1, 376



- WEISKE, H. Estimation of nitrogen in milk and urine of herbivora (abst.), - - - - - 8, 279
- WEISKE, H., B. Schulze, and E. Flechsig. Digestibility of cottonseed cake and meal (abst.), - - - - - 8, 60
- WEITH, W. Constitution and synthesis of carbtriphenyltriarnine (abst.), 1, 166: See also Merz, V.
- WELLER, A. Detection and estimation of titanium (abst.), - - - 5, 54
- WELLS, H. L., and W. L. Mitchell. Volumetric determination of titanic acid and iron in ores - - - - - 17, 878
- WELLS, J. S. Estimation of phosphoric acid in fertilizers (abst.), 7, 210
- WELSH, W. See Pechmann, H. von.
- WELTNER, A. Action of chlor- and bromacetone, etc., on ethyl acetoacetate (abst.), - - - - - 6, 85
- WENDER, N. Viscosimetric examination of butter for foreign fats, - - - - - 17, 719
- WERIGO, B., and P. G. Melikoff. Formation of monochlorlactic acid and dichlorpropionic acid from glyceric acid (abst.), - - - 1, 289
- WERNER, A. See Hantzsch, A.
- WERNER, E. Substitution of bromine for phenolic hydrogen (abst.), 7, 145: See also Berthelot, M.
- WESELSKY, P., and R. Benedikt. Some azo-compounds (abst.), 1, 394: Azophenols (abst.), - - - - - 2, 65
- WESSON, D. Examination of lard for impurities, - - - - - 17, 723
- WESTESSON, J. Determination of nickel in steel, - - - - - 16, 110
- WETHERED, E. Composition of Pennant grits, etc. (abst.), - - - 4, 144
- WEYL, T., and C. Bischoff. On gluten (abst.), - - - - - 2, 370
- WEYL, T. See also Frenzel, J.
- WHEELER, H. A., and C. Luedeking. Iodide coatings and sublmates (abst.), - - - - - 10, 26
- WHEELER, H. J. See Winton, A. L.
- WHITEHEAD, C. Estimation of tellurium in copper bullion, 17, 280: Tellurium: separation from copper residues, etc., - - - - - 17, 849
- WHITELAW, T. N. Action of sodium chloride on solutions of soaps (abst.), - - - - - 8, 104
- WHITFIELD, J. E. See Blair, A. A., and Gooch, F. A.
- WHITNEY, W. R. See Noyes, A. A.
- WICKHORST, M. H. Manufacture of phosphor bronze, 19, 393: Analysis of alloys containing phosphorus, - - - - - 19, 396
- WIDMANN, O. Synthesis of thymol from cuminol (abst.), - - - 4, 205
- WIEDEMANN, G. H. Relations between physical constants of chemical compounds (abst.), - - - - - 4, 264
- WIGAND, P. See Tollens, B.
- WIGNER, G. W. Koettstorfer's method for testing butter (abst.), 1, 568
- WILBER, F. A. See Austen, P. T.
- WILDERMAN, M. Boiling-points of bodies, a function of their chemical nature (abst.), - - - - - 12, 234
- WILDT, E., and A. Scheibe. Estimation of nitric acid (abst.), - - - 6, 240

- WILEY, H. W. Rotary power of commercial glucose and grape sugar, 2, 387 : Effect of heating with dilute acids and treating with animal charcoal, on the rotary power of glucose, etc., 2, 395 : Composition of maple sugar and syrup (abst.), 7, 92 : Analysis of seed of *Calycanthus glaucus* (abst.), 12, 15 : Influence of food and animal idiosyncrasy on composition of butter (abst.), 12, 16 : Pine tree sugar, 13, 228 : Honey from the aphid, or plant louse, 14, 350 : Announcement of the joint committee on the World's Fair Chemical Congress, 15, 43 : World's Congress Auxiliary of the World's Columbian Exposition, 15, 106 : Lamp for constant monochromatic flame, 15, 121 : Improved extraction apparatus, 15, 123 : Address of Welcome to the World's Chemical Congress, 15, 301 : The waste and conservation of plant food (presidential address), 16, 1 : Notice of meeting of Official Agricultural Chemists, 16, 431 : Assimilation of free nitrogen, a correction, 16, 432 : The Chemical Midwinter Fair Congress at San Francisco, 16, 645 : The synthetic food of the future (presidential address), 17, 155 : Recent advances in milk investigations, 18, (73) : Use of acetylene gas as an illuminant for polariscopic work, 18, 179, (37) : Estimation of levulose in honey, 18, 81, 189 : Determination of the heat of bromination of oils, 18, 378, (58) : Second International Congress of Applied Chemistry, 18, 923 : Modified form of ebullioscope, 18, 1063 : Mechanical analysis of basic phosphatic slags, 19, 19 : Recovery of waste platinum chloride, 19, 258 : Determination of potash and phosphoric acid in fodders, 19, 320 : Influence of vegetable mold on nitrogenous content of oats, - - - 19, 605.
- WILEY, H. W., and W. D. Bigelow. Determination of the hydrothermal value of a bomb calorimeter, 19, 439 : Heat of combustion of cereals and cereal products, - - - 20, 304
- WILEY, H. W., and E. E. Ewell. Determination of lactose in milks, 18, 428 : A correction, - - - 18, 1111
- WILEY, H. W., and W. H. Krug. Standard methods for the estimation of starch, - - - 20, 253
- WILEY, H. W. See also Ewell, E. E., Krug, W. H., and Runyan, E. G.
- WILFARTH, H. Determination of nitric acid (abst.), - - 10, 192
- WILKES, J. F. Decomposition of potassium cyanide, - - 6, 222
- WILL, H. Volumetric determination of boric acid (abst.), - 10, 43
- WILL, W. Bodies produced by action of alcoholic iodides on sulphocarbanilide (abst.), - - - 4, 230
- WILL, W., and I. Pinnow. Analysis of a meteorite of Carcote, Chili (abst.), - - - 12, 155
- WILLGERODT, C. Picrylsulphonic acid and sodium picrylsulphonate (abst.), - - - 7, 288
- WILLIAMS, C. B. Estimation of phosphoric acid in soils, etc., 17, 925
- WILLIAMS, C. P. Analysis of mine water from the lead region of Missouri, - - - P. 1, 179

- WILLIAMS, G. Substitute for litmus (abst.), 1, 110: Occlusion of hydrogen by zinc dust, etc. (abst.), 7, 113: Source of the hydrogen occluded by zinc (abst.), - - - - - 7, 286
- WILLIAMS, J. See Harrison, J. B.
- WILLIAMS, R. Adulteration of tallow with cotton-seed oil (abst.), 10, 86: Examination of gums and resins (abst.), 10, 157: Citric acid in lemon juice (abst.), - - - - - 10, 195
- WILLIAMS, R. P. Electrolytic process for manufacture of white lead, - - - - - 17, 835
- WILLIAMS, S. W. The nomenclature and notation of alkaloidal salts, - - - - - 11, 130
- WILLM, E. Mineral waters of the Auvergne (abst.), 1, 271: Analysis of waters of the Bourbonne (abst.), 2, 365: Mineral waters containing iron and nitrates (abst.), 2, 431: Manufacture of cyanides and ferrocyanides by the aid of trimethylamine (abst.), 6, 199
- WILLS, E. J., and K. L. Barr. Precipitations of alums by sodium carbonate (abst.), - - - - - 4, 258
- WILM, V. VON. Determination of fat in palm nut meal (abst.), 8, 28
- WILSON, L. F. Butter analysis (abst.), - - - - - 11, 54
- WINGARD, C. VON. Examination of humite minerals (abst.), - 7, 226
- WINKLER, C. Generation of hydrogen sulphide (abst.), 10, 65: Reduction of oxygen compounds by magnesium (abst.), - 12, 152
- WINSSINGER, C. See Spring, W.
- WINTHER, A. See Neville, R. H. C.
- WINTON, A. L. Conditions affecting the accuracy of the determination of potash as potassium platinichloride, 17, 453: Modified ammonium molybdate solution, - - - - - 18, 445
- WINTON, A. L., and H. J. WHEELER. The Lindo-Gladding method of determining potash, - - - - - 20, 597
- WISLICKENUS, W. Action of potassium cyanide on phthalide (abst.), 7, 204
- WITT, O. N. Azo-derivatives of diphenylamine and diphenylnitrosamine (abst.), 1, 396: Contributions on the indulines (abst.), 6, 81: On indophenols, 6, 82: Nitroso-derivatives of aromatic diamines (abst.), 8, 55: Progress in manufacture and use of artificial coloring matters - - - - - 15, 456
- WITT, O. N., and E. G. P. Thomas. Researches on the induline group (abst.), - - - - - 5, 96
- WITT, O. N. See also Nölting, E.
- WITTENBERG, M., and V. Meyer. On benzil (abst.), - - - 5, 126
- WITZ, G., and F. Osmond. Extraction of vanadium from basic slags of Creusot (abst.), 4, 241: Oxycellulose for determination of vanadium (abst.), - - - - - 8, 78
- WOLCKENHAAR. Determination of the specific gravity of butter and tallow at 100° (abst.), - - - - - 8, 205
- WOLFFBAUER, F. Method for the determination of the freezing-point of fatty acids - - - - - 16, 665
- WOLFF, A. See Terreil, A.

- WOLFF, C. H. Methods of quantitative spectral analysis (abst.), 1, 84: Spectroscopic reactions of ergot (abst.), 1, 103: Quantitative spectroscopic examination of pure indigo (abst.), - - - 6, 97
- WOLFF, N. Precipitation of manganese by air loaded with bromine vapor (abst.), 5, 244: See also Weber, A.
- WOLFRAM, G. Determination of theobromine in cocoa and chocolate (abst.), - - - - - 1, 365
- WOLL, F. W. Recent progress in analysis of cattle foods - - - 16, 174
- WOLLNY, R. Analytical operations and apparatus (abst.), - 7, 92, 180
- WOOD, E. F. Modification of molybdate method of estimating phosphorus in steel (abst.), 7, 294: Determination of phosphorus in iron and steel (abst.), - - - - - 9, 8
- WOOD, J., and J. L. Borden. Action of ammonium hydrate on halogen salts of lead - - - - - 6, 218
- WOODCOCK, R. C. Detection of alkaloids in food, etc. (abst.), - 4, 193
- WOODMAN, A. G. Method for the differentiation of organic matter in water, 20, 497: See also Talbot, H. P.
- WOODMAN, D. Note on lead poisoning by carbonated beverages, 11, 99; Necessity for inspection of wells in cities and towns, 13, 44: Three samples of crude petroleum, 13, 179: An apparatus for heating sealed tubes, 13, 182: Analyses of glass used in the manufacture of incandescent electric lamps, 14, 61: Note on denitration of pyroxylin, 14, 112: Variations in the composition of red lead - - - - - 19, 339
- WOODRUFF, E. C. Color reactions of nitric and chloric acids with certain aromatic bodies, - - - - - 19, 156
- WOODWORTH, E. H. See Noyes, A. A.
- WORINGER, L. Camphanic acid (abst.), - - - - - 7, 82
- WORMLEY, T. G. Determination of urea in urine (abst.), - - - 4, 196
- WRIGHT, C. R. A. On the manufacture of cuprammonium and zinc ammonium compounds, etc. (abst.), - - - - - 6, 139
- WRIGHT, C. R. A., and A. E. Menke. Manganese dioxide (abst.), 2, 344
- WRIGHT, C. R. A., and C. Thompson. Estimation of resin in soaps (abst.), - - - - - 8, 62
- WRIGHT, H. E. See Stone, W. E.
- WRIGHT, L. T. On hydrated ferric oxide, and its behavior with hydrogen sulphide (abst.), 5, 99: Estimation of hydrogen sulphide and carbon dioxide in coal gas (abst.), 5, 112: On gaseous fuel (abst.), 6, 26: Influence of temperature of distillation on the composition of coal gas (abst.), 6, 105: Illuminating power of methane (abst.), 7, 213: Coal distillation (abst.), - - - - - 10, 45
- WROBLEWSKY, E. Structural formulae of aromatic compounds (abst.), - - - - - 1, 169
- WROBLEWSKI, S. VON. Composition of hydrated carbonic acid (abst.), 4, 236: Liquefaction of hydrogen (abst.), 6, 157: Use of boiling oxygen as a means of cooling, and solidification of nitrogen (abst.), 7, 27
- WÜRTNER, E. See Lellmann, E.

- WURSTER, C. Oxidations by means of hydrogen dioxide (abst.),  
9, 192 : See also Fittig, R.
- WURTZ, A. Chloral hydrate (abst.), 1, 401 : Answer to remarks of  
Berthelot on chloral hydrate (abst.), 1, 403 : Action of ethylene  
chlorhydrin on pyridine bases and on quinoline (abst.), 4, 272 :  
Observations on Faraday's law, and on the law discovered by  
Bouty (abst.), 6, 126 : Note on Faraday's law (abst.), - - 6, 156
- WYNKOOP, G. Sodium nitrite as a precipitant of the iron group in  
qualitative analysis, - - - - - 19, 434
- WYROUBOFF, G. On Marciano's platinum sulphocyanate (abst.),  
2, 430 : On the racemates of sodium and potassium (abst.), 8, 37 :  
An acid cerium sulphate (abst.), - - - - - 12, 70
- YARDLEY, H. B. Note on Warington's modification of Kjeldahl's pro-  
cess (abst.), - - - - - 7, 291
- YOCUM, J. H. See Alsop, W. K.
- YOSHIDA, H. See Atkinson, R. W.
- YOUNG, A. V. E. Apparatus for gas analysis (abst.), - - 1, 283, 373
- YOUNG, S.  $\alpha$ -ethylvalerolactone,  $\alpha$ -ethyl- $\beta$ -methylvalerolactone, and  
a decomposition of  $\beta$ -ethylacetosuccinic ester (abst.), 5, 100 : Test  
for gallic acid (abst.), 5, 245 : See also Ramsay, W.
- YOUNG, S. W. Titration of stannous salts with iodine, 19, 809 : Solu-  
bility of stannous iodide in water and in solutions of hydriodic  
acid, 19, 845 : On iodostannous acid, - - - - - 19, 851
- YOUNG, S. W., and M. Adams. Action of iodine on solutions of  
stannous chloride - - - - - 19, 515
- YOUNG, S. W., and R. E. Swain. Volumetric determination of the  
nitro group in organic compounds, - - - - - 19, 812
- YOUNG, W. C. Detection of alum in flour by the logwood test  
(abst.), 1, 566 : Alumina as a natural constituent of wheat flour  
(abst.), - - - - - 9, 169
- YVON, P. Detection of fuchsine in wine (abst.), - - 1, 575
- ZARUDSKY, G. Determination of carbon in cast iron (abst.), - 6, 193
- ZECCHIM, [M.] Distinction of olive and cotton-seed oils (abst.), 4, 192
- ZECKENDORF, A. See Hantzsch, A.
- ZEIDLER, O., and F. Zeidler. Action of oxidizing agents on the  
hydrocarbons of the olefine series (abst.), - - - 2, 185
- ZENGER, V. See Brühl, J. W.
- ZENTHER, A. Action of carbon monoxide on alkaline hydroxides at  
high temperatures (abst.), - - - - - 2, 367
- ZERENNER, H. Microscopic examination of potable water (abst.), 1, 578
- ZIMMERMANN, A. Liquid carbonic acid under regulated pressure  
(abst.), - - - - - 6, 25
- ZIMMERMANN, C. Properties and atomic weight of uranium (abst.), 5, 25
- ZIMMERMANN, J. Action of ethyl chloracetate on phenylenediamine  
(abst.), - - - - - 4, 267
- ZIMMERMANN, J., and M. Knyrim. Action of ethyl chloracetate on  
primary diamines (abst.), - - - - - 5, 128

- ZIMMERMANN, Y., and A. Müller. *p*-Nitrobenzylidene chloride  
(abst.), - - - - - 8, 75  
ZINCKE, T. Action of amines on quinones (abst.), - - - 4, 226, 264  
ZINCKE, T., and O. Kegel. Action of chlorine on phloroglucine  
(abst.), - - - - - 12, 159  
ZÜBLIN, H. See Meyer, V.

## INDEX OF NEW BOOKS.

ADAMS, C. F. Physical Laboratory Manual for Secondary Schools,	19, 354
ADRIANCE, J. S. Laboratory Calculations and Specific Gravity Tables,	19, 355
ALLEN, A. H. Commercial Organic Analysis. Vol. III, Part III.	
Vegetable Alkaloids (concluded),	19, 263
ALLEN, J. A. Tables for Iron Analysis,	19, 177
ALPERS, W. C. The Pharmacist at Work,	20, 144
ANDÉS, L. E. Animal Fats and Oils,	20, 550
AUSTEN, P. T. Notes for Chemical Students,	19, 438
BANCROFT, W. D. The Phase Rule,	19, 767
BÉHAL, A. Traité de Chimie Organique d'après les Théories Modernes. Vol. I, Aliphatic Compounds, 19, 437 : Vol. II, Carbocyclic Compounds,	19, 680
BENNETT, A. A. A Text-Book of Inorganic Chemistry,	17, 243
BERNTSEN, A. A Text-Book of Organic Chemistry,	17, 500
BERTHELOT, M. Essai de Mécanique Chimique Fondée sur la Thermochimie,	2, 161
BISCHOFF, C. A. Handbuch der Stereochemie,	17, 497
BLOUNT, B., and A. G. Bloxam. Chemistry for Engineers and Manufacturers. Vol. I, Chemistry of Engineering, Building, and Metallurgy, 18, 745 : Chemistry for Engineers and Manufacturers. Vol. II, Chemistry of Manufacturing Processes,	19, 171
BOLTON, H. C. A Select Bibliography of Chemistry, 1492-1892,	15, 713
BORCHERS, W. Electric Smelting and Refining,	20, 156
BRUSH, G. J., and S. L. Penfield. Manual of Determinative Mineralogy, with an Introduction on Blowpipe Analysis,	18, 1109
CAIRNS, F. A. A Manual of Quantitative Chemical Analysis for the Use of Students,	19, 271
CALDWELL, G. C. Elements of Qualitative and Quantitative Chemical Analysis,	17, 419
CARNOT, A. Traité d'Analyse des Substances Minérales,	20, 891
CAVENDISH, HON. HENRY, F.R.S. Experiments on Air (Alembic Club reprint),	15, 664
CLARKE, F. W. The Constants of Nature. Part V.—A Recalculation of the Atomic Weights,	19, 177
CLASSEN, A. Quantitative Chemical Analysis by Electrolysis,	16, 877
CLASSEN, A., and W. Löb. Quantitative Chemical Analysis by Electrolysis,	20, 551
CLOWES, F. Elementary Qualitative Chemical Analysis,	17, 419
COMEY, A. M. A Dictionary of Chemical Solubilities,	20, 145
CONGDON, E. A. A Brief Course in Qualitative Analysis,	20, 889
CORNISH, V. Practical Proofs of Chemical Laws,	18, 99
CREMER, J. H., and G. A. Bicknell. A Chemical and Metallurgical Handbook,	16, 790

- CROOKES, W. Select Methods in Chemical Analysis, Chiefly Inorganic. Third edition, - - - - - 16, 789
- CURTMAN, C. O. Lessons in Qualitative and Volumetric Chemical Analysis, etc., - - - - - 16, 873
- CUSHMAN, A. S. The Post-Mortem Detection and Estimation of Strychnine (Transactions, etc.), - - - - - 16, 720
- DALTON, JOHN, William Hyde Wollaston, M.D., Thomas Thomson, M.D. Foundations of the Atomic Theory (Alembic Club Reprint) 15, 544
- DAVY, HUMPHRY. The Decomposition of the Fixed Alkalies and Alkaline Earths (Alembic Club reprint), 16, 717 : The Elementary Nature of Chlorine (Alembic Club reprint), - - - - - 17, 74
- DAY, D. T. Mineral Resources of the United States (1893), - - - - - 16, 572
- EILOART, A. A Guide to Stereochemistry, - - - - - 15, 480
- EISSLER, M. A Handbook of Modern Explosives, - - - - - 20, 161
- ELLIOTT, A. H. A System of Instruction in Qualitative Chemical Analysis, - - - - - 16, 429
- EVANS, P. W. An Introductory Course in Quantitative Analysis, 20, 238
- FARADAY, MICHAEL. The Liquefaction of Gases (Alembic Club Rep't) 18, 1110
- FINK, E. Précis d'Analyse Chimique, - - - - - 19, 267
- FLEISCHMANN, W. The Book of the Dairy, - - - - - 20, 157
- FLETCHER, E. L. Practical Instructions in Quantitative Assaying with the Blowpipe, etc., - - - - - 16, 571
- FLUCKIGER, F. A. Reactions. A Selection of Organic Preparations Important to Pharmacy, - - - - - 15, 478
- FRASER, P. Tables for the Determination of Minerals by Physical Properties, - - - - - 19, 353
- FREER, P. C. Descriptive Inorganic General Chemistry, 17, 152 : The Elements of Chemistry, - - - - - 18, 1110
- FRESENIUS, C. R. Manual of Qualitative Chemical Analysis, - - - - - 20, 142
- FUERTES, J. H. Water and Public Health, - - - - - 20, 158
- FURMAN, H. VAN F. A Manual of Practical Assaying, - - - - - 16, 142
- GIBBS, W. E. Lighting by Acetylene, - - - - - 20, 895
- GILL, A. H. A Short Handbook of Oil Analysis, - - - - - 20, 237
- GRIFFIN, R. B., and A. D. Little. The Chemistry of Paper-Making, 16, 875
- GROSSMANN, J. Die Schmiermittel. Methoden zu ihrer Untersuchung und Werthbestimmung, - - - - - 16, 69
- HALLER, A. Traité Élémentaire de Chimie, - - - - - 19, 356
- HARRIS, E. P. A Manual of Qualitative Chemical Analysis, - - - - - 17, 994
- HELM, G. The Principles of Mathematical Chemistry, - - - - - 20, 154
- HOFF, J. H. VAN'T. Studies in Chemical Dynamics, 19, 268 : The Arrangement of Atoms in Space, - - - - - 20, 386
- HOWE, J. L. Bibliography of the Platinum Group, - - - - - 20, 387
- HURST, G. E. Soaps, - - - - - 20, 989
- JONES, H. C. The Freezing-Point, Boiling-Point, and Conductivity Methods, - - - - - 20, 317
- KEISER, E. H. Laboratory Work in Chemistry, - - - - - 17, 996
- LADD, E. F. A Manual of Quantitative Chemical Analysis, - - - - - 20, 552
- LANDAUER, J. Spectrum Analysis, - - - - - 20, 383



- LANDOLT, H. Das optische Drehungsvermögen organischer Substanzen und dessen praktische Anwendung, - - - 20, 381
- LEFFMANN, H., and W. Beam. Analysis of Milk and Milk Products, 15, 596
- LOEW, O. The Energy of Living Protoplasm, - - - 19, 349
- LONG, J. H. Laboratory Manual of Elementary Chemical Physiology and Urine Analysis, 16, 874 : An Elementary Course in Experimental and Analytical Chemistry, 17, 744 : A Text-Book of Elementary Analytical Chemistry, - - - 20, 893
- LÜPKE, R. Elements of Electrochemistry, - - - 20, 142
- MCNEAL, F. B. Eighth Annual Report of the Dairy and Food Commissioner of Ohio, - - - 17, 333
- MANDEL, J. A. Handbook for the Bio-Chemical Laboratory, - 19, 357
- MASON, W. P. Water Supply (Considered Principally from a Sanitary Standpoint), - - - 18, 562
- MEDICUS, L. Introduction to Qualitative Analysis, - - 19, 265
- MENDELÉEFF, D. The Principles of Chemistry, - - - 20, 148
- MENSCHUTKIN, N. Analytical Chemistry, - - - 18, 190
- MÖLLER, F. P. Cod-Liver Oil and Chemistry, - - - 17, 584
- MORGAN, J. L. R. An Outline of the Theory of Solution and its Results, - - - 20, 153
- MORLEY, E. W. On the Densities of Oxygen and Hydrogen, and on the Ratio of their Atomic Weights, - - - 18, 192
- MOSES, A. J., and C. L. Parsons. Elements of Mineralogy, Crystallography, and Blowpipe Analysis, - - - 17, 745
- MUIR, M. M. P. The Alchemical Essence and the Chemical Element. An Episode in the Quest of the Unchanging, 16, 575 : Tables and Directions for Qualitative Chemical Analysis, - - 18, 1110
- MURRILL, P. I. Alkaloidal Estimation ; A Bibliographical Index, 20, 890
- NEWTN, G. S. A Text-Book of Inorganic Chemistry, - - 17, 71
- NOYES, A. A. A Detailed Course of Qualitative Analysis, - 16, 503
- NOYES, A. A., and S. P. Mulliken. Laboratory Experiments on the Class Reactions and Identification of Organic Substances, - 20, 319
- NOYES, W. A. Organic Chemistry for the Laboratory, - - 20, 240
- OETTEL, F. Introduction to Electrochemical Experiments, 20, 317 : Practical Exercises in Electrochemistry, - - - 20, 318
- ORNDORFF, W. R. A Laboratory Manual Containing Directions for a Course of Experiments in Organic Chemistry, - - 15, 418
- OSTWALD, W. The Scientific Foundations of Analytical Chemistry, 18, 98
- PALAZ, A. A Treatise on Industrial Photometry, with Special Application to Electric Lighting, - - - 17, 151
- PARNICKE, A. Die Maschinellen Hilfsmittel der chemischen Technik, - - - 17, 74
- PASTEUR, LOUIS. Researches on the Molecular Asymmetry of Natural Organic Products (Alembic Club reprint), - - 20, 235
- PHILLIPS, F. C. Researches upon the Phenomena of Oxidation and Chemical Properties of Gases, - - - 15, 292
- POOLE, H. The Calorific Power of Fuels, - - - 20, 388

- PRIESTLEY, JOSEPH, and Carl Wilhelm Scheele. The Discovery of Oxygen (Alembic Club reprint), - - - - 16, 718
- PUPIN, M. I. Thermodynamics of Reversible Cycles in Gases and Saturated Vapors, - - - - 16, 430
- REDWOOD, I. I. A Practical Treatise on Mineral Oils and Their By-Products, - - - - 20, 236
- REV, JEAN. The Increase in Weight of Tin and Lead on Calcination (Alembic Club reprint), - - - - 17, 585
- RICHARDSON, G. M. Laboratory Manual and Principles of Chemistry for Beginners, - - - - 16, 879
- RICKETTS, P. DE P. Notes on Assaying, - - - - 19, 356
- ROSCOE, SIR H. E. John Dalton and the Rise of Modern Chemistry, 17, 658
- RUDDIMAN, E. A. Incompatibilities in Prescriptions, etc., - 20, 151
- SADTLER, S. P. A Hand-Book of Industrial Organic Chemistry, 17, 914
- SADTLER, S. P., and H. Trimble. A Text-Book of Chemistry Intended for the Use of Pharmaceutical and Medical Students, - - 17, 656
- SANFORD, P. G. Nitro-Explosives, - - - - 19, 178
- SANGER, C. R. Experiments in General Chemistry and Qualitative Analysis, 18, 747: Laboratory Experiments in General Chemistry, 18, 747
- SCHEELE, CARL WILHELM, and others. The Early History of Chlorine (Alembic Club reprint), - - - - 20, 152
- SCHIMPF, H. W. A Text-Book of Volumetric Analysis, - - 17, 69
- SCHRAUB, F. C. First Annual Report of the Commissioner of Agriculture of New York, - - - - 17, 333
- SEYMOUR, P. H. Bibliography of Aceto-Acetic Ester and Its Derivatives, - - - - 17, 332
- SHENSTONE, W. A. Justus von Liebig: His Life and Work, - 17, 833
- SIMON, W. Manual of Chemistry, - - - - 17, 501
- SMITH, E. F. Electro-Chemical Analysis, - - - - 16, 574
- SNYDER, H. The Chemistry of Dairying, - - - - 19, 175
- SPENCER, G. L. A Hand-Book for Chemists of Beet-sugar Houses and Seed-Culture Farms, - - - - 20, 236
- SPEYERS, C. Text-Book of Physical Chemistry, - - - - 20, 389
- STETTENHEIMER, L. Kräfte der chemischen Dynamik, - - 17, 336
- STILLMAN, T. B. Engineering Chemistry: Quantitative Analysis, 19, 272
- STORER, F. H., and W. B. Lindsay. An Elementary Manual of Chemistry, - - - - 16, 644
- TALBOT, H. P. Introductory Course of Quantitative Chemical Analysis, - - - - 19, 355
- TILDEN, W. A. Hints on the Teaching of Elementary Chemistry in Schools and Science Classes, - - - - 18, 563
- THOMPSON, E. P. Roentgen Rays and Phenomena of the Anode and Cathode. Concluding Chapter by W. A. Anthony, - - 19, 175
- THORP, F. H. Inorganic Chemical Preparations, - - 19, 178
- THORPE, T. E. Humphry Davy, Poet and Philosopher, - - 20, 160
- THRELFALL, R. On Laboratory Arts, - - - - 20, 384

- THRESH, J. C. Water Analysis, Especially Designed for the Use of Medical Officers of Health, - - - - 19, 180
- TRIMBLE, H. The Tannins. A Monograph on the History, Preparation, Properties, Methods of Estimation, and Uses, etc., Vol. II, 16, 428
- VENABLE, F. P. A Short History of Chemistry, 16, 876 : The Development of the Periodic Law, - - - - 19, 173
- WALLER, A. D. Exercises in Practical Physiology : Part III.—Physiology of the Nervous System, Electro-Physiology, - - - 20, 238
- WEDDERBURN, A. J. A Compilation of the Pharmacy and Drug Laws of the Several States and Territories, 17, 333 : Report on the Extent and Character of Food and Drug Adulteration, - - 17, 333
- WELLS, H. L. A Laboratory Guide in Qualitative Chemical Analysis, 20, 728
- WELLS, J. S. C. A Short Course in Inorganic Qualitative Analysis for Engineering Students, - - - - - 20, 896
- WHITELEY, R. L. Organic Chemistry, - - - - - 18, 99
- WIECHMANN, F. G. Lecture Notes on Theoretical Chemistry, 15, 119 :  
Lecture Notes on Theoretical Chemistry. Second Edition, - 19, 266
- WILEY, H. W. Proceedings of the Eleventh Annual Convention of the Association of Official Agricultural Chemists, 17, 330 : Principles and Practice of Agricultural Analysis. Vol. I, 17, 912 ; Vol. II, 17, 995 ; Vol. III, - - - - - 19, 269
- WILLARD, J. T. An Introduction to the Organic Compounds of Every-Day Life, - - - - - 16, 502
- WILLIAMS, R. P. Elements of Chemistry, - - - - - 20, 159
- WILSON, E. B. The Chlorination Process, - - - - - 20, 239
- WISSER, J. P. Explosive Materials, - - - - - 20, 813
- WURTZ, C. A., W. H. Greene, and H. F. Keller. Elements of Modern Chemistry, - - - - - 17, 832
- Agricultural Experiment Station of Nebraska, Seventh Annual Report (1893), - - - - - 16, 573
- Georgetown College, Qualitative Chemical Analysis of Inorganic Substances as Practiced in - - - - - 17, 245
- Methods for the Analysis of Ores, Pig Iron, and Steel, - - 20, 389
- Pharmacopoeia of the United States of America (1890), - - 15, 418
- Select Tables from the U. S. Pharmacopoeia (1890), - - 16, 430
- U. S. Department of Agriculture. The Cotton Plant—Its History, Botany, Chemistry, Culture, Enemies, and Uses, - - 19, 181

## INDEX OF OBITUARIES.

ALSBERG, DR. MEINHARD,	-	-	-	-	-	-	19, 954
CASAMAJOR, PAUL,	-	-	-	-	-	-	9, 206
CHEVREUL, MICHEL EUGÈNE,	-	-	-	-	-	-	11, 71
COLBY, CHARLES EDWARDS,	-	-	-	-	-	-	20, 139
COLLIER, PETER, PH.D.,	-	-	-	-	-	-	18, 748
DOUGLAS, SILAS H.,	-	-	-	-	-	-	12, 306
GOLDMARK, JOSEPH,	-	-	-	-	-	-	4, 7
HAVEMEYER, THEODORE A.,	-	-	-	-	-	-	19, 588
KEKULÉ, PROFESSOR AUGUST,	-	-	-	-	-	-	18, 1107
KRÜSS, GERHARD,	-	-	-	-	-	-	17, 423
MCCLURE, PROFESSOR EDGAR,	-	-	-	-	-	-	19, 767
MACINTOSH, JAMES BUCKTON,	-	-	-	-	-	-	13, 153
MEYER, LOTHAR VON,	-	-	-	-	-	-	17, 664
MEYER, VICTOR,	-	-	-	-	-	-	19, 918
MOORE, DR. GIDEON E.,	-	-	-	-	-	-	17, 659
MOTAY, CYPRIEN M. TESSIÉ DU,	-	-	-	-	-	-	2, 305
MOTT, DR. HENRY A.,	-	-	-	-	-	-	19, 90
NASON, HENRY BRADFORD,	-	-	-	-	-	-	17, 339
NORTON, PROFESSOR LEWIS MILLS,	-	-	-	-	-	-	15, 54, 241
PASTEUR, a tribute to,	-	-	-	-	-	-	17, 1000
PÉLIGOT, EUGÈNE MELCHIOR,	-	-	-	-	-	-	12, 128
POWERS, PROFESSOR MARK,	-	-	-	-	-	-	17, 586
RUPP, WILLIAM,	-	-	-	-	-	-	13, 71
SCHULTZ, CARL H.,	-	-	-	-	-	-	19, 676
SMITH, JOHN LAWRENCE,	-	-	-	-	-	-	5, 228
STAS, JEAN SERVAIS,	-	-	-	-	-	-	14, 173
WORMLEY, PROFESSOR THEODORE GEORGE,	-	-	-	-	-	-	19, 275

## INDEX OF SUBJECTS.

- Abbreviations of titles of chemical journals, - - - - 10, 152
- Absorbent blocks, - - - - - 17, 472
- Absorption pipette for gas analysis, - - - - - 18, 67
- Accuracy, actual, of chemical analyses, 18, 808 : of commercial silver assay, 16, 505 : of metallurgical analyses, probable limits of, - 18, 35
- Acenaphthene, heat of solution of, - - - - - 18, 151
- Acetal, new method for making (abst.), - - - - - 2, 432
- Acetaldehyde, action of, on resorcinol (abst.), - - - - 9, 34
- Acetamide, heat of solution of, in water and in alcohol, - 18, 156
- Acetamide, ethyl-, halogen derivatives of, - - - - P. 2, 115
- Acetanilide, heat of solution of, 18, 152 : identification of, 17, 933 : qualitative examination of, - - - - - 18, 142
- Acetanilide, *p*-amido-, and some new azo compounds (abst.), 7, 55 : brom-, synthesis of indigo from (abst.), - - - - 12, 163
- Acetate, calcium, manufacture and analysis of, 4, 94 : ethyl, preparation of (abst.), 2, 366 : uranium, as a reagent for albuminoids (abst.), - - - - - 7, 291
- Acetate, chlor-, amyl, (abst.), 8, 74 : chlor-, butyl, and butyl dichlor- (abst.), 8, 180 : chlor-, ethyl, action of, on phenylenediamine (abst.), 4, 267 : chlor-, ethyl, action of, on primary diamines (abst.), 5, 128 : benzalaceto-, ethyl, action of, on phenylhydrazine (abst.), - - - - - 8, 55
- Acetbenzalacetic ester : see benzalacetoacetic ester.
- Acetic acid, action of, on French oil of turpentine (abst.), 8, 71 : determination of, in crude calcium acetate (abst.), 1, 367, 582 ; determination of, in vinegar, 17, 741, 834 : determination of, in wine (abst.), 1, 364 : fluidity of anhydrous and diluted (abst.), 8, 229 : mixture of, with benzene does not separate in layers, 17, 932 : new compounds of, with ammonia (abst.), 4, 234 : solubility of sulphur in (abst.), 1, 99 : use of, in milk analysis, - 8, 205
- Acetic acid, allyl-, behavior of, with sodium hydroxide, 17, 1 : bromdichlor- (abst.), 4, 269 : chlordibrom- (abst.), 4, 269 : diallyl-, action of hydrobromic acid and bromine on, 4, 271 : dichlor-, and *p*-toluidine, formation of *p*-toluyl-*p*-methylimisatin from (abst.), 7, 205 : diphenyl-, synthesis of (abst.), 2, 436 : heptyl-, and heptylmalonic acid, 5, 10 : *p*-nitrobenzoyl- (abst.), 7, 31 : phenoxy- (abst.), - 2, 292
- Acetic anhydride, action of, on pyrrol (abst.), - - - - 7, 84
- Acetoacetate, ethyl, action of chlor- and bromacetone, acetophenone bromide, and phenylbromacetic acid on (abst.), 6, 85 : condensation product of phenanthraquinone with (abst.), - - - 5, 92
- Acetobenzoic anhydride (abst.), - - - - - 2, 431
- Acetone from acetic acid, 18, 231 : action of allyl iodide, butyl iodide, and zinc upon (abst.), 7, 58 : action of aluminum chloride upon

- (abst.), 5, 117: action of boron fluoride upon (abst.), 1, 400: action of, on phenanthraquinone (abst.), 4, 221: condensation of (abst.), 4, 268: contraction of aqueous solutions of, 16, 618: detection of (abst.), 8, 24: determination of, in wood spirit (abst.), 4, 196: diethoxy- (abst.), 10, 188: improvement in the manufacture of, 17, 187: improvements on Squibb's method for estimating, 19, 316: literature of estimation of, 19, 319: in methyl alcohol (abst.), 10, 195: table of specific gravity for aqueous, 17, 200: volumetric determination of, 18, 1068: use of, as solvent in the preparation of tannins, - - - - 15, 344
- Acetone, acetyl-, derivatives of (abst.), 9, 171: acetyl-, homologues of (abst.), 10, 14: diethoxy-, - - - - 10, 188
- Acetone and chloroform, acid obtained by action of alcoholic potassium hydroxide on (abst.), - - - - 9, 102
- Acetonitrile, preparation of (abst.), - - - - 2, 432
- Acetonitrile, dichlor-, a polymeric (abst.), 7, 177: ethoxy-, - P. 2, 124
- Acetonylacetone (abst.), - - - - 7, 147
- Acetophenone bromide, action of, on ethyl acetoacetate (abst.), - 6, 85
- Acetophenones, brom-, action of amides on (abst.), - - 9, 195
- Acetyl chloride, action of, on benzaldehyde in the presence of zinc dust (abst.), 5, 132: action of, on fumaric acid (abst.), 4, 221: compound of, with titanium tetrachloride (abst.), 2, 430: and glacial acetic acid, action of, on fumaric acid (abst.), - - 5, 18
- Acetyl compounds of carbohydrates (abst.), - - - - 2, 225
- Acetyl, determination of, by means of magnesia (abst.), - - 1, 547
- Acetylacetone, derivatives of (abst.), 9, 171: formation of (abst.), 9, 172: homologues of (abst.), - - - - 10, 14
- Acetyldiphenylamine, action of phosphorus pentachloride on (abst.), 4, 264
- Acetylene, formation of, from iodoform (abst.), 6, 37: halogen compounds of (abst.), 5, 29, 58: heat of combustion of (abst.), 4, 229: illumination with, for polariscope, - - - - 18, 179
- Acetylene hydrocarbon, caprylidene (abst.), 9, 6: hydrocarbons, silver nitrate as a reagent for (abst.), - - - - 10, 87
- Acetylphenyllactic acid, behavior of (abst.), - - - - 7, 143
- Acid, free, in tan liquors, titration of (abst.), 1, 367: new, isomeric with itaconic acid (abst.), - - - - 5, 124
- Acid residues from the manufacture of gun-cotton, regeneration of (abst.), - - - - 9, 38
- Acidimetry and alkalimetry, - - - - 12, 131
- Acidity in soils, the relative sensibility of plants to, - - 20, 103
- Acids, antiseptic action of (abst.), 1, 496: aromatic, action of iodine on silver salts of (abst.), 4, 264: aromatic, action of nitrous anhydride on, 12, 55: aromatic amido- (abst.), 2, 370: complex, containing boric acid (abst.), 2, 434: complex inorganic (abst.), 1, 111, 482: haloid, action of, on hydrocyanic acid (abst.), 4, 221: monobasic organic, amidines and thiamides of (abst.), 2, 188:

- monobasic organic, double chemical function of (abst.), 1, 489 : organic, halogenized and hydroxylized (abst.), 4, 175 : solubility of salts of weak, in stronger acids, 20, 742 : solubility of, in solutions of salts of other acids, 20, 751 : unsaturated aromatic (abst.), 1, 242 : unsaturated monobasic, etherification of (abst.), 2, 172 : unsaturated, researches upon (abst.), 1, 236 : weak, reagent to detect acid nature of (abst.), 8, 79 : weak, reciprocal displacement of (abst.), - - - - - 1, 279
- Acids, fatty, action of superheated steam upon (abst.), 1, 403 : boiling-points and specific volumes of the esters of (abst.), 8, 228 : decomposition of, by heat (abst.), 8, 25 : and their derivatives, heats of combustion of (abst.), 8, 183 : determination of, in butter, 16, 673 : determination of freezing-point of, 16, 665 : determination of, in oils (abst.), 6, 100 : determination of the points of fusion and solidification of (abst.), 8, 65 : heat of combustion of (abst.), 8, 83 : in oils (abst.), 11, 55 : oxidation of (abst.), 8, 184 : products of the dry distillation of the silver salts of (abst.), 8, 64 : separation of solid and liquid, 17, 289, 740 : thermochemical relations of (abst.), 8, 82 : toxic effects of (abst.), 8, 229 : volatile, occurrence of, in urine (abst.), - - - - - 8, 86
- Acids and alcohols of aliphatic series, thermochemical relations of (abst.), - - - - - 8, 82
- Aconitates (abst.), - - - - - 4, 231
- Aconitic acid, occurrence of, in cane juice and raw sugar, - P. 1, 220
- Acridine (abst.), 2, 98 : production of (abst.), - - - 6, 86
- Acridine picrate (abst.), - - - - - 7, 84
- Acridity in plants, cause of, - - - - - 13, 215
- Acrolein, action of, on xylydine, - - - - - 5, 1
- Acrolein, diphenylamine-, - - - - - 4, 32
- Acrolein-urea, 4, 58 : with remarks upon Schiff's publications upon condensed ureas, - - - - - 5, 36
- Acrylic acid, dichlor-, decomposition of, by alkalies (abst.), 1, 163 :  $\beta$ -dipropyl-, from  $\beta$ -dipropylethylenelactic acid (abst.), 7, 83 : ethoxy-, from  $\alpha$ -dichlorpropionic acid (abst.), - - - 12, 227
- Actinometry, new method in, - - - - - 2, 249
- Adams and Wanklyn method for estimating fat in milk, - - - 12, 488
- Adenine and hypoxanthine (abst.), - - - - - 12, 161
- Adipic acid, dichlor-, preparation from  $\alpha$ -dichlorpropionic acid (abst.), 8, 35 : dichlor-, properties of (abst.), - - - 8, 36
- Adulteration of food, drink, drugs, etc., - - - - - 3, 60
- Affinity, chemical (abst.), 1, 295 : chemical, methods of estimating (abst.), 1, 497 : relative, of oxygen, sulphur, and the halogens, for hydrogen (abst.), - - - - - 1, 385
- Affinities, relative, of oxygen and the halogens (abst.), - - - 1, 280
- Agricultural chemistry, notable events in the progress in, - - - 14, 83
- Agricultural Chemists, Official, meeting of, - - - - - 16, 431
- Agriculture, application of ferrous sulphate in (abst.), - - - 7, 54

- Air, apparatus for determination of oxygen (abst.), 1, 585: determinations of free and albuminoid ammonia, and of ozone, during epidemic of yellow fever, 1, 263: determination of moisture in (abst.), 2, 171: hygienic analysis of (abst.), 9, 219: impurities in, in Cleveland, 17, 105: presence of nitrous acid in (abst.), - 12, 69
- Air-bath, a modified, 20, 271: new form of, - - - 16, 31
- Air-pump, Sprengel, on the development of (abst.), - - - 6, 97
- Air-thermometer, new form of, for technical purposes, - - - 12, 277
- Albinism, vegetable, chemical study of (abst.), - - - 2, 342
- Albumin in acid urine, precipitation of (abst.), 1, 348: detection of small quantities of (abst.), 9, 37: determination of, according to Millon and Commaille (abst.), 9, 47: determination of, in bacterial urine (abst.), 12, 415: determination of, in cow's milk, 16, 712: determination of sulphur in (abst.), 12, 176: determination of, in urine (abst.), 10, 197: egg, on the coagulation of (abst.), 8, 73: formation of urea from (abst.), 12, 475: influence of carbohydrates and fatty bodies on the putrefaction of (abst.), 8, 230: products formed by the putrefaction of (abst.), 2, 174: separation of, from peptone (abst.), 10, 157: test for (abst.), - - - 12, 415
- Albumin compounds, crystalline, preparation of (abst.), - - - 1, 494
- Albuminoid matter in plants, relation of, to the formation of oxalic acid (abst.), 9, 7: nitrogen, sources of error in determining, 18, 464: substances (abst.), - - - - - 6, 95
- Albuminoids (abst.), 2, 225: determination of, in food for cattle (abst.), 1, 565: influence of tartrates and lactates on the digestion of, 12, 394: of maize, 14, 313: in pumpkin seeds, decomposition of (abst.), 2, 136: uranium acetate as a reagent for (abst.), - - - 7, 291
- Alchemical chart, - - - - - 13, 293
- Alchemical medals, exhibition of, - - - - - 13, 30
- Alcohol, absolute, 15, 126: action of chloride of lime upon (abst.), 1, 496: action of, on diazo-compounds (abst.), 7, 148: alleged tests for (abst.), 5, 233: allyl, formation of (abst.), 9, 100: Bang's process for detection of impurities of (abst.), 10, 27: detection of, in essential oils and chloroform (abst.), 1, 582: detection and estimation of small quantities (abst.), 1, 574: detection of traces of water in, 1, 38: determination of, with cobalt sulphocyanate, 2, 340: determination of, in fermented liquors (abst.), 1, 572, 573: determination of small quantities of, 20, 293: diatomic, derived from *β*-naphthol (abst.), 4, 77: examination of (abst.), 12, 118, 119: mercuric nitrate as a reagent for (abst.), 1, 339: note on the purification of, 11, 124: *in statu nascendi*, P. 1, 173: untaxed, for use in the arts, 18, 1106: use of fluorides in manufacture of, - 14, 212
- Alcohol lamp with constant level (abst.), - - - - - 6, 99
- Alcohols, aluminum (abst.), 4, 142: compounds of, with lithium and magnesium chlorides (abst.), 2, 135: esterification of, influence of structure and molecular weight upon (abst.), 1, 256: of fusel oil, 14, 45: higher, and hydrocarbons, obtained from American petro-



- leum (abst.), 6, 95 : polyhydric, synthesis of (abst.), 9, 171 ;  
 15, 704 : synthesis of, in the pyridine series (abst.), - - 12, 160  
 Alcohols and acids of aliphatic series, thermochemical relations of  
 (abst.), - - - - - 8, 82  
 Alcoholate of potassium hydroxide (abst.), - - - - - 8, 273  
 Alcohol radicals, action of chlorine on the sulphides of (abst.), 10, 16 :  
 action of water on haloid compounds of (abst.), - - 2, 65  
 Aldehyde, action of *p*-amidodimethylaniline on (abst.), 7, 230 : am-  
 moniacal alkaline silver solution as reagent for (abst.), 5, 50 :  
 glyceric (abst.), - - - - - 9, 101  
 Aldehyde-ammonia, hydrazine from (abst.), - - - - - 12, 165  
 Aldehyde and ammonia reaction for determining constitution of  
 quinones (abst.), - - - - - 4, 199  
 Aldehyde phenols, action of acetic anhydride on (abst.), - - 2, 130  
 Aldehydes, action of, on phenanthraquinone (abst.), 4, 198 : chlor-  
 inated, action of, on benzene (abst.), 6, 165 : combination of  
 glycol with (abst.), 9, 172 : condensation of compounds contain-  
 ing the dicarbonyl group with (abst.), 5, 101 : condensation prod-  
 ucts of, with ethyl acetoacetate, etc. (abst.), 5, 101 : of the hydro-  
 cinnamic acid series (abst.), 12, 231 : reactions of (abst.), - - 5, 239  
 Aldehydes and ammonia, action of, on benzil (abst.), 7, 31 : and gly-  
 cols, combinations of (abst.), - - - - - 10, 18  
 Aliphatic series, constitution of nitro-compounds of (abst.), 8, 202 :  
 nitro-compounds of (abst.), 8, 274 : properties of urethanes of,  
 8, 166 : synthesis in, by means of aluminum chloride (abst.), - 9, 172  
 Alizarin, detection of (abst.), 2, 95 : determination of (abst.), - 2, 95  
 Alizarin,  $\beta$ -amido- (abst.), - - - - - 7, 229  
 Alizarin blue, soluble (abst.), 5, 51 : orange, preparation of (abst.), 5, 20  
 Alkali, caustic, determination of, in presence of carbonate (abst.),  
 4, 165 : 10, 181 : determination of, in silver nitrate (abst.), - 4, 165  
 Alkali metals, estimation of, in silicates (abst.), 6, 312 : reduction of  
 compounds of, by magnesium (abst.), 12, 152 : vapor-densities of  
 (abst.), - - - - - 2, 371  
 Alkali process, new (abst.), 10, 183 : waste, recovery of sulphur from  
 (abst.), - - - - - 10, 90  
 Alkalies, determination of, in ash of plants (abst.), 1, 357 : determina-  
 tion of, in insoluble silicates, 12, 138 : determination of, in sili-  
 cates (abst.), - - - - - 1, 334, 536  
 Alkalimetry, new indicator for (abst.), 4, 166 : and acidimetry, - 12, 131  
 Alkaline earths, volumetric determination of (abst.), 7, 251 : hy-  
 droxides (abst.), 7, 283 : nitrates, combination of silver nitrate  
 with (abst.), 8, 50 : sulphides, action of nitrates on (abst.), - 6, 142  
 Alkaloid, a new, from cinchona bark (abst.), 4, 168 : a new volatile  
 (abst.), - - - - - 1, 286  
 Alkaloids, absorption spectra of (abst.), 6, 309 : accompanying co-  
 caine, isocinnamic acid present in (abst.), 12, 161 : artificial  
 (abst.), 2, 99 : chemistry of lesser-known (abst.), 1, 553 : chem-

- istry of nitrogen as disclosed in the constitution of, 9, 128 : color-reactions for (abst.), 4, 193 : color-reactions of, with antimony and bismuth trichlorides (abst.), 1, 544 : detection of, in food, etc., (abst.), 4, 193 : determination of, in cinchona bark (abst.), 1, 552; 4, 193 : determination of, in plants (abst.), 1, 548 : extraction of, from cinchona bark (abst.), 4, 192 : found in the human cadaver (abst.), 1, 554 : nature and properties of (abst.), 8, 23 : of nuxvomica (abst.), 7, 116 : of opium, separation of (abst.), 9, 176 : of opium, solubility of (abst.), 9, 216 : perchloric acid as a reagent for (abst.), 1, 545 : periodides of, 20, 706 : presence of, in old flours (abst.), 8, 167 : of quinine group, polarized light for examination of, P, 2, 57 : of quinine group, pyridinetricarboxylic acid from (abst.), 2, 172 : sabadilla, 14, 226 : synthesis of (abst.), 7, 78 : vegetable, acidimetric estimation of, 17, 822 : volumetric estimation of, as periodides, - - - - - 20, 706
- Alkaloidal extracts, separation of, 18, 1104 : salts, nomenclature and notation of, - - - - - 11, 130
- Alkyl chlorides, action of, on ammonia and on methylamines (abst.), 8, 95 : disulphoxides, synthesis of so-called (abst.), 4, 176 : haloid salts and quinoline, bases resulting from addition of (abst.), 4, 265 : iodides, note on, - - - - - 13, 144
- Alkylation of amides (abst.), - - - - - 12, 159
- Alkylsulphonated fatty acids, formation of sulphones from (abst.), 7, 203
- Allantoxanic acid, structure of (abst.), - - - - - 6, 135
- Alloxan series, uric acid derivatives of, syntheses of (abst.), - 1, 172, 275
- Alloys, apparatus for determination of melting-point of (abst.), 4, 263 : explosive, of zinc with platinum metals (abst.), 4, 240 : formation of, by pressure (abst.), - - - - - 4, 269
- Alloys and metal work, ancient, composition of (abst.), - - - 4, 171
- Alloys of aluminum (gold, silver, nickel), 16, 485 : of lead and tin, blow-pipe reactions with, P, 2, 108 : of lead and tin, and lead and antimony, commercial valuation of 16, 541 : of iron with molybdenum, tungsten and chromium, as solutions, 16, 735 : of tungsten, determination of tungsten in (abst.), - - - - - 11, 53
- Allyl alcohol, formation of (abst.), 9, 100 : alcohol, chlor-, and some of its derivatives (abst.), 5, 119 : iodide, action on phenol in the presence of lime or aluminum foil (abst.), 5, 234 : iodide, preparation of (abst.), 9, 100 : iodide, butyl iodide, and zinc, action of, on acetone (abst.), 7, 58 : sulphocyanate, aromatic bases isomeric with (abst.), - - - - - 2, 93
- Allylacetic acid, behavior with boiling sodium hydroxide solution, - 17, 1
- Allylanisole, derivatives of (abst.), - - - - - 2, 171
- Allyldiethylcarbinol (abst.), 2, 54 : hydrocarbon obtained from (abst.), 7, 60
- Allyldimethylcarbinol, coefficient of refraction of hydrocarbon from (abst.), - - - - - 7, 85
- Allyldipropylcarbinol (abst.), - - - - - 2, 54
- Allylene, action of mercuric oxide on (abst.), - - - - - 6, 167

- Allylmalonic acid, action of bromine on (abst.), 4, 271 : behavior of, with boiling sodium hydroxide solution, - - - 17, 1
- Allylsuccinic acid and a carboxycaprolactonic acid (abst.), - - - 5, 69
- Allylsulphuric acid and some of its salts (abst.), - - - 7, 208
- Almond oil, unreliability of test for (abst.), - - - 8, 87
- Almonds, proteids of, - - - 18, 610
- Alum, ammonia, fractional dehydration of, etc., 4, 180 : clarification of water by (abst.), 7, 200 : cubic (abst.), 2, 370 : detection of, in bread (abst.), 4, 188 : detection of, in flour (abst.), 1, 566 : influence of, on digestion, - - - 16, 587
- Alum baking powders, influence of, on digestion, etc. (abst.), - - - 10, 171
- Alum phosphate baking powders, - - - 12, 452
- Alums, chrome, accommodation of (abst.), 2, 370 : examination of the formation of, by the differential dilatometer (abst.), 7, 77 : expansion of (abst.), 5, 27 ; 7, 77 : formation of, by electrolysis, 20, 759 : precipitation of, by sodium carbonate (abst.), 4, 258 : water of combination of (abst.), - - - 8, 272 ; 9, 100
- Alumina, amount of, in pure flour (abst.), 1, 110 : determination of, in phosphates, 17, 260 : as a natural constituent of wheat flour (abst.), - - - 9, 169
- Alumina residues from baking powders, solubility of, in gastric juice, 9, 27
- Alumina and silica in pure wheat, relation between amounts of (abst.), 1, 110
- Aluminates of potassium and sodium in solution, - - - 2, 27
- Aluminous mineral species, evigtokite and liskeardite (abst.), - - - 5, 97
- Aluminum, 15, 221, 276 : action of nitric acid upon, 19, 711 : alloys of, with gold and silver, 16, 485 : analysis of, 18, 766 : atomic weight of (abst.), 1, 277, 321 ; 20, 164 : determination of (abst.), 7, 296 : determination of, in alloys, 18, 772 : determination of, in the presence of iron and phosphoric acid (abst.), 10, 66 : as an electrode, 20, 302 : notes on, 16, 485 : pure metallic, properties of, 4, 145 : separation of, from iron, 17, 931 : (abst.), 7, 124 : separation of, from manganese (abst.), 1, 325 : separation of, from manganese, zinc, cobalt and nickel (abst.), 1, 529 : solder for, 16, 881 : use of, for condensers, 19, 153 : valence of, - - - 4, 180
- Aluminum alcohols, products of decomposition of, by heat (abst.), 4, 142 : basic sulphate, remarks about, 16, 153 : chloride, action of, on brombenzene (abst.), 4, 174 : chloride, action of, on the halides of naphthol (abst.), 8, 94 : chloride, decomposing action exercised by, on certain hydrocarbons (abst.), 7, 142 : chloride, decompositions produced by action of (abst.), 4, 170 : chloride, new reaction of (abst.), 9, 172 : chloride and bromide, reactions in the presence of (abst.), 2, 172 : hydroxide, behavior of hydrogen sulphide towards alkaline solutions of (abst.), 1, 163, 334 : hydroxide, influence of, on digestion, 16, 857 : hydroxide as a precipitant for suspended clay, 13, 100 : oxychlorides (abst.), 7, 284 : phosphate, decomposition of, at high temperatures (abst.), 5, 119 : salts, effects of, on gastric juice in digestion, - - - 2, 13

- Aluminum and iron, salts of, useful in dyeing (abst.), - - - 6, 172
- Alunite (abst.), - - - - - 5, 117
- Amalgams of chromium, iron, cobalt, nickel, and manganese (abst.),  
 1, 276 : of iron, etc., - - - - - P. 1, 49
- Amandin, a proteid of the almond and the peach, - - - 18, 610
- Amarine and lophine, constitution of (abst.), - - - 4, 225
- Amber cane, Minnesota early, examination of, - - - 1, 44
- American Chemical Society, organization of, - - - P. 1, 3, 18
- American chemical societies, early, - - - - - 19, 717
- American chemist, the (presidential address), - - - 14, 331
- Amide of the sugar cane, additional notes on, - - - 20, 133
- Amides, action of bromine on (abst.), 5, 21 : action of, on bromaceto-  
 phenones (abst.), 9, 195 : alkylation of (abst.), 12, 159 : aromatic,  
 direct conversion of, into azo-compounds, 3, 39 : formation of basic  
 compounds from (abst.), 4, 206 : of the monobasic acids of the  
 aliphatic series, preparation of (abst.), 5, 25 : preparation of nitriles from,  
 - - - - - P. 2, 123
- Amidines, new class of (abst.), 5, 24 : and imido-ethers, action of hy-  
 droxylamine upon (abst.), 6, 236 : and thiamides of monobasic  
 organic acids (abst.), - - - - - 2, 188
- Amido bases, phenolates of (abst.), - - - - - 5, 100
- Amido group, replacement of, in aromatic amines by the halogens  
 (abst.), - - - - - 7, 119
- Amido-acids, action of mustard oils on (abst.), 7, 85 : aromatic (abst.), 2, 370
- Amidoazo-compounds, action of hydrochloric acid upon (abst.), 7, 86
- o*-Amidoazo-compounds (abst.), - - - - - 6, 82
- $\beta$ -Amidobutyric acid (abst.), - - - - - 2, 367
- Amidomercaptans of the fatty series, anhydro-bases from (abst.), 12, 158
- Amidoximes and azoximes, behavior of (abst.), - - - 8, 75
- Amines, action of bromine on, in alkaline solution (abst.), 5, 129 : ac-  
 tion of, on dichloronaphthoquinone (abst.), 4, 265 : action of, on  
 quinone (abst.), 8, 23 : action of, on quinones (abst.), 4, 226, 265 :  
 action of sodium hydroxide, calcium oxide, and magnesia on  
 (abst.), 6, 27 : aromatic, action of iodine monochloride upon (abst.),  
 1, 484 : aromatic, compounds of, with silver nitrate and sulphate  
 (abst.), 1, 483 : aromatic, a few benzoyl derivatives of (abst.), 7,  
 245 : aromatic, nitriles and carboxylic acids from (abst.), 6, 85 :  
 aromatic, replacement of the amido-group in, by the halogens  
 (abst.), 7, 119 : use of, in dyeing (abst.), 8, 231 : decomposition  
 of (abst.), 9, 104 : heat of combustion of some (abst.), 7, 289 : in  
 juice of sugar cane, 18, 743 : primary, action of benzotrichloride  
 on, - - - - - 1, 524
- Ammonia, action of alkyl chlorides on (abst.), 8, 95 : action of, on di-  
 and tri-halogen substitution products of the hydrocarbons (abst.),  
 12, 228 : action of, on molybdenyl chloride, 15, 61 : action of, on  
 nitrosophenols (abst.), 7, 86 : action of, on wolframyl chloride,  
 15, 68 : commercial, tarry ingredients in (abst.), 1, 92 : com-

- pounds of uranyl chloride with (abst.), 7, 121 : decomposition of, by heat (abst.), 6, 73 : determination of nitric acid by transformation into, P. 2, 9 : determination of, in potable waters (abst.), 1, 565 : displacement of, by magnesia (abst.), 9, 99 : electrolysis of carbon in (abst.), 8, 178 : emission of, by vegetable soils (abst.), 10, 12 : estimation of, by Schlösing's process, for plant extracts (abst.), 6, 41 : formation of, 11, 40, 44 : heat of formation of (abst.), 2, 433 : liquefaction of, apparatus for (abst.), 4, 220 : new compounds of nitric and acetic acids with (abst.) 4, 234 : process for determination of, in water analysis, 5, 104 : separation of, from trimethylamine, 18, 670 : used in United States, 15, 567 : from water, collector for the distillation of, - - - 20, 286
- Ammonia and aldehydes, action of, on benzil (abst.) 7, 31 : and nitrous acid, formation of, from free nitrogen (abst.), - - - 12, 350
- Ammonia soda process, influence of, on the value of hydrochloric acid and chlorine (abst.), - - - - - 6, 174
- Ammoniacal solutions, apparatus for evaporating (abst.), - - - 9, 220
- Ammonio-silver compounds, history of (abst.), - - - 6, 73
- Ammonium acid sulphates, P. 1, 88 : alum, fractional dehydration of, 4, 180 : bases derived from quinoline (abst.), 7, 119 : benzenesulphonate, products of the dry distillation of (abst.), 7, 231 : bromoselenate, preparation of, 20, 566, 571 : chloride, dissociation of, by heat, 12, 48 : chloride, process for obtaining, from the nitrogen of coal, coke, etc. (abst.), 10, 184 : chloride solution, standard, alteration of, in the dark, P. 2, 147 : chloride, standard solution of, action of light and darkness on, 2, 246 : citrate solution, method of neutralizing, 18, 457 : citrate solution, preparation of, 17, 47 : citrate solution, preparation of a neutral, 20, 585 : compounds, new class of (abst.), 2, 224 : hydroxide, action of, on the halogen salts of lead, 6, 218 : hydroxide, on the existence of (abst.), 6, 189 : molybdate, existence of phosphoric acid in (abst.), 6, 98 : molybdate solution, a modified, 18, 445 : nitrate, production of, in ozonization of air by phosphorus, 3, 5 : nitrate, rate of decomposition of (abst.), 5, 235 : nitrite, and by-products in ozonization of air, etc., 1, 145 : nitrite, decomposition of, by means of platinum sponge (abst.), 12, 473 : nitrite and hydrogen dioxide, production of, in burning hydrogen and hydrocarbons in air, 6, 17 : oxalate, acid, influence of, on the solubility of neutral oxalate (abst.), 8, 71 : palladium bromide, 16, 467 : phosphomolybdate, gravimetric estimation of phosphoric acid as, 18, 23 : phosphomolybdate, reducing action of zinc on, 17, 747 : ruthenium nitrosochloride, 16, 390 : salts, action of, on glycerol (abst.), 8, 273 : salts, action of, on metallic sulphides (abst.), 1, 331 : salts, action of sodium hydroxide, calcium oxide, and magnesium oxide on (abst.), 6, 27 : sulphate, solubility of copper sulphate in the presence of (abst.), 8, 34 : sulphide, dissociation of (abst.), 1, 402 : sulphocyanide, titration of halogens, copper, and mercury with (abst.), 1, 323 :

- thiocarbamate, use in analytical work (abst.), 9, 115: thiosulphate, formation of, in gas generators, 8, 47: selenide, - 20, 277
- Amyl alcohol, dextrorotatory (abst.), 1, 273: alcohol, Jorissen's reaction for (abst.), 4, 196, 207: chloracetate (abst.), - - - 8, 74
- $\beta$ -Amylan and  $\gamma$ -amylan (abst.), - - - - - 4, 143
- Amylideneaniline (abst.), - - - - - 1, 164
- Amylnaphthalene, preparation of (abst.), - - - - - 6, 164
- Analyzing and sampling commercial products, standard methods of (abst.), - - - - - 6, 200
- Analysis, desirability of and practicability of establishing uniform methods of (abst.), 6, 30: indirect, calculation of, 17, 466: microchemical, of minerals and rocks (abst.), 1, 95: of organic compounds containing halogens or nitrogen (abst.), 1, 254: organic, in the wet way (abst.), 1, 542: proximate, of plants (abst.), - 2, 220
- Analytical chemistry, recent advances in, 15, 376: reviews or reports on progress of, - - - - - 1, 83, 320, 527; 4, 160, 189
- Analytical operations and apparatus (abst.), - - - - - 7, 92, 180
- Analytical work, the dignity of (presidential address) - - - 20, 81
- Anethol. See allylanisoil.
- Angelic and methylocrotonic acids, contributions to the history of (abst.), - - - - - 1, 396
- Angelic and tiglic acids, constitution of (abst.), 1, 241: contributions to the knowledge of (abst.), - - - - - 1, 240
- Anglesite, reproduction of, by wet process (abst.), - - - - 10, 113
- Anhydrides, mixed (abst.), 10, 13: formation of, in the succinic acid series (abst.), - - - - - 12, 157
- Anhydro-bases from amidomercaptans of the fatty series (abst.), - 12, 158
- Anhydrolupinin (abst.), - - - - - 5, 17
- $\beta$ -Anilido- and  $\beta$ -amidobutyric acid (abst.), - - - - - 2, 367
- Aniline, action of phosphorus pentasulphide on (abst.), 10, 40: application of, in qualitative analysis (abst.), 5, 52: compounds of, with metallic salts, 3, 136: compounds of nickel and cobalt chlorides with (abst.), 1, 165: compound of oenanthaldehyde with, 5, 2: introduction of methyl or ethyl groups into (abst.), 5, 64: new salts of (abst.), 1, 286: synthesis of homologues of (abst.), 4, 228: titration of (abst.), 6, 27: use of, as absorbent of cyanogen (abst.), 10, 156
- Aniline black (abst.), 7, 63: black, photographic process by means of, 8, 189: colors, detection of, in wines, fruit juices, etc. (abst.), 9, 201: derivative of  $\alpha$ -chloridinitrophenol, - - - - - P. 2, 111
- Aniline carbonate (abst.), 10, 114: dichromate (abst.), - - - 9, 173
- Aniline,  $p$ -brom-, derivatives of (abst.), 2, 224:  $o$ -nitro-, method of preparing (abst.), - - - - - 7, 227
- Anilinesulphonic acid,  $o$ -nitro- (abst.), - - - - - 7, 227
- Anilines, chlor- and chlornitro- (abst.), - - - - - 2, 57
- Anisoil,  $m$ -nitro-, behavior towards ammonia (abst.), - - - 1, 169
- Anisoilphthaloylic acid (abst.), - - - - - 8, 182
- Anthemene from Roman camomile (abst.), - - - - - 6, 191

- Anthracene, synthesis of (abst.), - - - - - 5, 132  
 Anthracene compounds of the chrysazine series (abst.), - - - - - 1, 290  
 Anthracene series, experiments in, - - - - - 17, 354  
 Anthracenecarboxylic acid, the third (abst.), - - - - - 2, 95  
 Anthracylamine (abst.), - - - - - 4, 230  
 Anthragallol, dyeing properties of (abst.), - - - - - 6, 142  
 Anthramine, on (abst.), - - - - - 4, 207; 5, 25  
 Anthranilic acid, preparation of (abst.), 7, 60: production of, from  
   *o*-nitrotoluene (abst.), - - - - - 2, 227  
 Anthranol, amidomethyl-, (abst.), - - - - - 5, 241  
 Anthrapurpurine, relation to isopurpurine and flavopurpurine, - - - 1, 184  
 Anthraquinoline, synthesis of (abst.), - - - - - 6, 167, 234  
 Anthraquinone, formation of, under peculiar conditions, 12, 26: new  
   synthesis of (abst.), - - - - - 7, 32  
 Anthraquinone, diamido-, constitution of (abst.), 1, 491: nitroamido-  
   and hydroxymethyl- (abst.), - - - - - 5, 240  
 Anthraquinonesulphonic acid, action of ammonia on (abst.), 2, 365:  
   reduction of (abst.), - - - - - 1, 291  
 Anthrax virus, preparation of cultivations of (abst.), - - - - - 6, 78  
 Antimonic chloride, action of, on acetic acid and acetic anhydride  
   (abst.), - - - - - 2, 363  
 Antimony, alloys of, with arsenic, lead, and tin, analysis of, 17, 869:  
   alloys of, with lead, commercial valuation of, 16, 541: atomic  
   weight of (abst.), 1, 320: chronic poisoning by (abst.), 5, 118:  
   detection of, in minerals (abst.), 10, 173: detection of tin in pre-  
   sence of (abst.), 4, 168: determination of, by Marsh's test (abst.),  
   12, 476: determination of, volumetric (abst.), 4, 167: electrolysis  
   of pyrophosphate of (abst.), 12, 173: elimination of, from the hu-  
   man system, P. 2, 142: heat of formation of the fluoride, chloride,  
   and oxychlorides of (abst.), 6, 157: precipitation of, in antimonyl  
   potassium tartrate, 17, 87: Reinsch's test for, - - - 18, 953  
 Antimony cinnabar, on the formation of, 18, 342: compounds, aromatic  
   (abst.), 5, 63: potassium chloride (abst.), 5, 113: potassium  
   chlorobromide, crystallographic examination of (abst.), 5, 114:  
   sulphide, researches on (abst.), 9, 5: trichloride, compounds of  
   naphthalene and benzene with (abst.), - - - - - 5, 60  
 Antimony, separation of, from arsenic (abst.), 1, 332, 483: 9, 11:  
   qualitative (abst.), 6, 98: from bismuth, electrolytic, 15, 203:  
   from cadmium, electrolytic, 15, 200: from copper, electrolytic, 15,  
   32: from copper, by hydrobromic acid gas, 20, 804: from copper,  
   by hydrochloric acid gas, 18, 1035: from gold (abst.), 8, 278:  
   qualitative (abst.), 10, 156: from lead, by hydrobromic acid gas,  
   20, 801: from mercury, electrolytic, 15, 205: from platinum  
   (abst.), 8, 278: qualitative (abst.), 10, 156: from tin (abst.), 1,  
   483; 8, 76; 9, 11: qualitative (abst.), 6, 98: volumetric (abst.), 8, 200  
 Antimony and arsenic, identification of, 13, 210: poisoning, by chem-  
   ical history of a case of, - - - - - 17, 667

- Antimonyl potassium mucate and saccharate (abst.), - - - 6, 35
- Antiseptic soap (abst.), - - - - - 10, 92
- Antiseptic values of chlorides, nitrates, and sulphates (abst.), - - 9, 190
- Antiseptics, behavior of, toward salivary digestion, 14, 4: effect of, on the action of diastase (abst.), 10, 91: influence of, upon peptic digestion, 19, 889: two new (abst.), 4, 242: see also Disinfectants.
- Antiseptics and bacteria (abst.), - - - - - 6, 79
- Aphis, honey from, - - - - - 14, 350
- Apparatus, analytical (abst.), 7, 92, 180: for automatic filtration, 19, 284: for delineation of curved surfaces, 13, 263: for determination of melting-points (abst.), 4, 169: for determining solubilities, 16, 715: for effecting solution, 19, 286: extraction, for fats (abst.), 4, 250: graduated, government facilities for standardizing 20, 912: for heating sealed tubes, 13, 182: illuminating, 17, 496: for laboratory (abst.), 7, 150: for liquefaction of ammonia (abst.), 4, 220: for measuring reagents, 19, 282: for measuring sterilized solutions (abst.), 9, 123: for moisture experiments with soils, 19, 623: for obtaining distilled water from service steam, P. 1, 211: for promoting the interaction of liquids and gases, 15, 361: for rapid gas analysis, 3, 91: for reducing measured volumes of a gas to normal conditions (abst.), 6, 97: for the technical analytical laboratory, 19, 281
- Applied Chemistry, Second International Congress of, 20, 137, 234, 550
- Applied chemistry, the year's progress in (review), - - - 20, 967
- Apricot, peach, and walnut oils (abst.), - - - - - 8, 184
- Arabic acid, composition of, etc. (abst.), - - - - - 6, 87
- Aragonite, note on, 1, 79: containing lead, analysis of, - - - P. 2, 14
- Arc light, action of, on gases (abst.), - - - - - 12, 351
- Areometers, descriptions of, corrections for, etc., P. 1, 2, 8, 19, 40, 48: early mention of, 13, 252: and graduated glass vessels, verification of, - - - - - P. 2, 128
- Argol. See Tartaric acid.
- Argon, 16, 719; 17, 219: atomic weight of, 18, 211: bibliography of, 19, 133: compounds of, 17, 422: a constituent of uraninite (note), 17, 421: density of, 20, 170: discussion on, in Royal Society, 17, 236: in gas given off by heating metallic oxides in hydrogen, 20, 232: liquefaction and solidification of, 17, 233: present knowledge of, 19, 124: the spectra of, 17, 230: use of, in thermometry, - 17, 477
- Arita porcelain, raw materials used in making, - - - - - 2, 315
- Aromatic lead compounds (abst.), 10, 39: organic salts of phosphoric acid, preparation of (abst.), 5, 18: para-compounds, so-called, introduction of azo group in (abst.), 7, 32: products of animal body (abst.), 2, 226: sulphonic acids, action of fused alkalis upon (abst.), - - - - - 2, 294
- Aromatic bases, compounds of, with metallic salts, 3, 134: condensation products of (abst.), - - - - - 5, 19
- Aromatic compounds, action of iodine upon (abst.), 1, 393: action of iodine on (abst.), 2, 369: estimation of nitrogen by Kjeldahl



- method in, 7, 108: researches on isomerism in (abst.), - - 7, 119
- Aromatic hydrocarbons, oxidation of substitution products of (abst.),  
- - - - - 1, 115; 2, 221
- Arsenate, ferric, production of a crystallized (abst.), - - 2, 132
- Arsenates, action of hydrochloric acid gas upon, 17, 683: a few crystallized (abst.), 8, 165: neutral to litmus (abst.), 4, 272: of nickel, conditions of formation of, etc. (abst.), - - - 8, 49
- Arsenic, amounts of, found in wall papers, etc., 2, 339: atomic weight of, 18, 1049: 19, 363: detection of, by Marsh's test (abst.), 12, 353, 477: detection of, by Reinsch's test, 18, 953: detection of, by Schneider's process, modified (abst.), 1, 555: determination of, in metallic copper (abst.), 4, 167: determination of, in pyrites (abst.), 10, 66: determination of, volumetric (abst.), 1, 333: in glycerol, 17, 883: occurrence of, in bone phosphate fodder (abst.), 11, 54: poisonous effects of, chemical theory of (abst.), 4, 268: poisonous nature of, chemical cause of, 2, 115: post-mortem diffusion of, 13, 283: recovery of, - - - 14, 223
- Arsenic compounds, aromatic, formation of (abst.), - - - 5, 63
- Arsenic, separation of, from antimony (abst.), 1, 332; 8, 76; 9, 11: from bismuth, electrolytic, 15, 202: from cadmium, electrolytic, 15, 201: from cadmium, by hydrobromic acid gas, 20, 804: from cadmium, by hydrochloric acid gas, 18, 1039: from cobalt, by hydrobromic acid gas, 20, 808: from cobalt, by hydrochloric acid gas, 18, 1042: from copper, by hydrobromic acid gas, 20, 805: from copper, by hydrochloric acid gas, 18, 1039: from gold (abst.), 8, 78: qualitative (abst.), 10, 56: from iron, by hydrobromic acid gas, 20, 809: from iron, by hydrochloric acid gas, 18, 1040: from platinum (abst.), 8, 78: qualitative (abst.), 10, 156: from silver by hydrobromic acid gas, 20, 806: from silver, by hydrochloric acid gas, 18, 1039: from tin (abst.), 1, 483; 8, 76; 9, 11: from vanadium, by hydrochloric acid gas, 18, 1051: from zinc, by hydrochloric acid gas, - - - 18, 1041
- Arsenic tests of the U. S. Pharmacopoeia, - - - 16, 580
- Arsenic and antimony, identification of, 13, 210: poisoning by, chemical history of a case of, - - - 17, 667
- Arsenic, antimony, tin, and lead, analysis of alloys of, - - 17, 869
- Arsenic and copper left on sprayed fruit, - - - 16, 71
- Arsenic, phosphorus, sulphur, etc., estimation of, in native copper (abst.), - - - 6, 241
- Arsenic acid, action of hydrogen sulphide on (abst.), 10, 11: preparation of (abst.), 7, 285: reduction of, in solution (abst.), 7, 123: separations of, from metals (abst.), 1, 533: dimethyl-, physiological effects of (abst.), 1, 160: phenyl- and diphenyl-, physiological effects (abst.), - - - 1, 159
- Arsenides, formation of, by pressure (abst.), - - - 5, 68
- Arsenious oxide, solubility of, in coffee decoctions, - - P. 1, 2, 56
- Arsenomolybdic acid (abst.), - - - 6, 286

- Arsenopyrite, chemical behavior of, 16, 624 : constitution of, - 19, 948  
 Arsine. See Hydrogen arsenide.  
 Arsenotungstic acid (abst.), - - - - - 6, 306  
 Asbestos, artificial, see French chalk : use of, in filtration (abst.), 10, 69  
 Asbestos cloth for blotting paper in milk analysis (abst.), 9, 175 :  
     filters, note on (abst.), - - - - - 4, 248  
 Ash, determination of (abst.), 10, 68, 194 : of certain weeds, analyses of, 2, 24 : for extraction of iodine, preparation of (abst.), 2, 434 : of plants, determination of alkalies in (abst.), 1, 357 : of raw tanning materials, composition of the, - - - 20, 338  
 Ashes, volcanic, from Mt. Etna, analysis of (abst.), 4, 232 : from Krakatoa, in 1883 (abst.), 6, 127 : from Vesuvius, composition of (abst.), - - - - - 4, 237  
 Ash analysis, changes in official methods of, - - - - 16, 792  
 Asparagine, precipitation of (abst.), - - - - - 5, 63  
 Asphalt, analysis of, 17, 55 : determination of sulphur in 20, 882 : examination of (abst.), 4, 196 : technical analysis, of, 16, 809 : 18, 275  
 Aspirator, new, - - - - - 5, 71 : 7, 106  
 Assay, scorification, loss of gold and silver during, 16, 313 : for silver, commercial, accuracy of, 16, 505 : for fine silver, modified method of, - - - - - 19, 814  
 Assay furnace, gas (abst.), - - - - - 6, 244  
 Astringents in wine, determination of (abst.), - - - 4, 242  
 Atmosphere : see Air.  
 Atmospheric nitrogen, assimilation of, - - - - - 12, 145  
 Atomic volume as a periodic function, - - - - - 20, 935  
 Atomic weights, report of committee, 16, 179 ; 17, 201 ; 18, 197 ;  
     - - - - - 19, 359 ; 20, 163  
 Atoms, determination of number of, in a molecule (abst.), - 6, 47  
 Atropic and isotropic acids (abst.), - - - - - 1, 243  
 Atropine, contributions to history of (abst.), - - - - 4, 176  
 Atropine periodides and iodo-mercurates, - - - - - 20, 329  
 Auramines (abst.), - - - - - 9, 212  
 Auric chloride, anhydrous, solvents of (abst.), 8, 34 : combination of, with sulphur tetrachloride and selenium tetrachloride (abst.), - - - - - 8, 20  
 Aurin (abst.), 2, 51 : by-product in the manufacture of (abst.), 5, 234 : formation of (abst.), - - - - - 1, 386  
 Avenalin, a globulin from the oat kernel, - - - - - 18, 621  
 Axle grease, preparation of (abst.), - - - - - 8, 26  
 Azoanthrol dyes (abst.), - - - - - 4, 266  
 Azobenzene, on the direct substitution products of (abst.), - 5, 54  
 Azo colors, 1, 465 ; 2, 446 ; (abst.), 4, 173 : belonging to tetrazo group, 3, 20 : spectra of, - - - - - 6, 117, 149  
 Azo group, introduction of, in the so-called aromatic para compounds (abst.), - - - - - 7, 32  
 Azo compounds from aromatic amides, 3, 39 : of derivatives of acet-

- anilide (abst.), 7, 55: new (abst.), 1, 394; 2, 95: nomenclature of complex (abst.), 5, 24: secondary and tertiary, researches on (abst.), - - - - - 6, 94
- p*-Azocresol (abst.), - - - - - 6, 161
- Azo and disazo compounds of cresols (abst.), - - - - - 7, 54
- Azoimide. See Hydrazoic acid.
- Azonaphthalene (abst.), - - - - - 7, 228
- Azophenol, dichlor-, constitution of (abst.), - - - - - 1, 493
- Azophenols (abst.), - - - - - 1, 65
- Azotometer, Scheibler's calcimeter used as an (abst.), - - - - - 1, 375
- Azotometry, remarks on (abst.), - - - - - 6, 96
- Azoximes and amidoximes, behavior of, - - - - - 8, 75
- Azylines (abst.), - - - - - 5, 52
- Bacillus anthracis*, heating of cultivations of (abst.), - - - - - 6, 130
- Bacillus ferment* of urea, researches on the (abst.), - - - - - 1, 488
- Bacillus* of tuberculosis, fats contained in, 18, 449: some products of, 19, 782
- Bacillus tuberculosis* and *B. mallei*, composition of, - - - - - 17, 605
- Bacteria, chemical composition of (abst.), 2, 136: in milk sugar, 18, 687: presence of, in living healthy animals (abst.), 2, 289: study of gas-producing, 18, 157: testing water for (abst.), - - - - - 1, 103
- Bacteria counter, a new, - - - - - 20, 507
- Bacteria and antiseptics (abst.), - - - - - 6, 79
- Bacterial growth, chemical products of, and physiological effects, 13, 61
- Bacteriological examination of water, sanitary value of, - - - - - 19, 591
- Baking powders, alum, influence of, on digestion, etc. (abst.), 10, 171: alum phosphate, 12, 452: solubility of alumina residues from, in gastric juice, - - - - - 9, 27
- Balance, device for adjusting, 16, 699: for first year's work in general chemistry 18, 189: safety attachment for riders of, - - - - - 16, 764
- Bananas, ripe and unripe, composition of (abst.), - - - - - 4, 272
- Bang's process for the detection of impurities in alcohol (abst.), - - - - - 10, 27
- Banquet to Messrs. Mond and Tyrer, - - - - - 17, 997
- Barium, atomic weight of, 16, 185; 17, 205: separation of, from strontium (abst.), - - - - - 12, 118, 410, 501
- Barium camphorate (abst.), 6, 91: cesium ferrocyanide, 20, 33: cesium ruthenocyanide, 20, 31: chloride, decomposition of, by potassium oxalate (abst.), 2, 346: chloride, volatility of, 19, 156: chromate, crystallized, manufacture of (abst.), 1, 279: dioxide, derivatives of (abst.), 2, 365: ferrate, reactions of, 17, 765: ferrocyanide, use of organic bases in preparing, 17, 927: hydroxide for absorbing carbon dioxide, 17, 247: hydroxide, preparation of (abst.), 7, 65: permanganate, method of preparing (abst.), 6, 77: potassium ferrocyanide, 20, 32: potassium ruthenocyanide, 20, 30: propyldeneacetate, 17, 22: ruthenocyanide, 18, 986: sulphate, effect of an excess of reagent in precipitation of, 18, 793: sulphate, precipitation of, 4, 212: sulphate, precipitation and purification of, 3, 37: titanate (abst.), 8, 178: trinitride, - - - - - 20, 229

- Barium group, analysis of (abst.), - - - - 12, 501
- Barium and strontium, estimation of, in silicate analysis, 16, 83: occurrence of, in silicate rocks, - - - - 16, 81
- Barley, proteids of, 17, 539: the steeping of (abst.), - - - - 4, 143
- Barley fat, composition of (abst.), - - - - 8, 274
- Barley and malt, nitrogenous constituents of (abst.), - - - - 6, 173
- Baryto-celestite, composition of, - - - - 13, 290
- Base, a new (abst.), 1, 285; 2, 94: new, found in the animal body (abst.), - - - - 7, 175
- Bases, organic, certain additive reactions of, 18, 28: putrefaction, from fish (abst.), - - - - 7, 175
- Bast fibers, chemistry of (abst.), - - - - 4, 169
- Baths, sulphurous, observations on (abst.), - - - - 1, 389
- Battery, carbon, without metals (abst.), 9, 38: "Lalande-Spence" primary, 7, 195: Skrivanow's (abst.), - - - - 6, 126
- Batteries, thermo-electric, electromotive force of (abst.), - - - - 1, 585
- Baudouin's reagent to detect sesame oil (abst.), - - - - 9, 177
- Bauxite, analysis of, 18, 780: commercial analysis of, - - - - 20, 209
- Bearing-metal alloys, analysis of, - - - - 19, 934
- Beef fat, microscopic detection of, in lard, - - - - 18, 189
- Beer, analysis of, use of polariscope in (abst.), 1, 363: brewed without hops, bitter principle of (abst.), 1, 363: detection of saccharin in (abst.), 10, 88: detection of salicylic acid in (abst.), 1, 578: determination of organic nitrogen in (abst.), - - - - 4, 162
- Beeswax, adulteration of (abst.), 1, 361: analysis and composition of (abst.), 6, 170: method for investigation of (abst.), 1, 578: non-acid components of (abst.), - - - - 8, 229
- Beet root, analysis of, - - - - 3, 151
- Beet root juice, fermentation of, during diffusion (abst.), 2, 91: residues, nitriles produced in destructive distillation of (abst.), 1, 277
- Beet roots, sugar, experiments with, - - - - P. 2, 56
- Beet sugar, raw, reducing substance in (abst.), - - - - 10, 38
- Beet sugars, vanillin in certain unrefined (abst.), - - - - 2, 368
- Beginners in chemistry, quantitative work for, - - - - 16, 59
- Belladonnine isomeric with atropine (abst.) - - - - 2, 173
- Bellows for blow-pipe, - - - - P. 2, 29
- Benzal acetoacetic ester, action of phenylhydrazine on (abst.), - - - - 8, 55
- Benzaldehyde, action of acetyl chloride on, in the presence of zinc dust (abst.), 5, 133: action of nitrogen trioxide on, 12, 56: action of, on xylydine, 8, 173: condensation products of, with malonic and *iso*-succinic acids (abst.), - - - - 5, 237
- Benzaldehyde, *o*-nitro-, and its behavior to nascent hydrogen (abst.), 2, 366: *o*-nitro-, preparation of (abst.), 6, 87: *o*-nitro-, preparation of indigo-blue from (abst.), 5, 63: *p*-nitro and *p*-toluidine, condensation products of (abst.), - - - - 10, 41
- iso*-Benzalphenalide and benzylidenephthalide (abst.), - - - - 9, 210
- Benzamide, heat of solution of, - - - - 18, 154

- Benzamide, *o*-amido-, derivatives of (abst.), - - - 7, 144
- Benzene, action of isobutyl chloride on, in the presence of aluminum chloride (abst.), 6, 191: action of chlorinated aldehydes on (abst.), 6, 165: action of ethyl chlorocarbonate on (abst.), 4, 143: action of, on ethylene in presence of aluminum chloride (abst.), 1, 390: action of methylene chloride on (abst.), 6, 163: action of nitrogen trioxide on, 12, 9: action of oxygen, ozone, and nascent oxygen upon, 3, 16: commercial, presence of an isocyanide in (abst.), 7, 29: compounds of, with antimony trichloride (abst.), 5, 60: constitution of (abst.), 4, 229: determination of, in illuminating gas, 16, 697: heat of combustion of (abst.), 4, 229: method of obtaining, from coal gas (abst.), 6, 175: mixture of, with acetic acid does not separate in layers, 17, 932: remarks on the action of vinyl bromide and tribromide on, in the presence of aluminum chloride (abst.), 6, 166: separation of, from crude tar, naphtha, and crude benzines (abst.), 6, 101: syntheses by action of metallic chlorides upon (abst.), - - - - - 1, 397
- Benzene derivatives, isomerisms of (abst.), 1, 233: hexachloride, action of water and silver hydroxide on 2, 205: theory, contribution to (abst.), - - - - - 12, 234
- Benzene, *p*-amidooctyl- (abst.), 7, 176: brom-, action of aluminum chloride on (abst.), 4, 174: monobrom-, a second (abst.), 12, 352: nitro-, oxidation of phenol by means of (abst.), 7, 207: perchlor-, perchlorphenol from (abst.), 7, 228: tetrabrom (abst.), - - - 4, 175
- Benzenes, diamido-, isomeric, action of sulphuric acid on (abst.), 2, 95: nitramido-, isomeric, action of sulphuric acid on (abst.), 2, 95
- Benzenesulphonate, ammonium, products of the dry distillation of (abst.), 7, 231: sodium, note on preparation of, - - - 20, 549
- Benzenesulphonic acid, derivatives of, - - - - 19, 835
- Benzenesulphonic acid, pentabrom- (abst.), - - - - 2, 186
- Benzenesulphonic acids, nitro-, amido-, and brom- (abst.), - - - 2, 186
- Benzenylamidoxime, derivatives of (abst.), - - - - 8, 75
- Benzhydrol and naphthalene, condensation of (abst.), - - - 2, 369
- Benzidine, tetramethyl- (abst.), - - - - 6, 87
- Benzidine and hydrazobenzene (abst.), - - - - 7, 59
- Benzil, action of aldehydes and ammonia on (abst.), 7, 31: on the constitution of (abst.), - - - - 5, 126
- Benzoic acid, action of nitrogen trioxide on, 12, 56: curve of solubility of (abst.), 1, 272: solubility of (abst.), - - - - 2, 88
- Benzoic acid, amido-, derivatives of succinic, sebacic, and phthalic acids (abst.), 7, 202: amido-, nitrogenized colloid derived from (abst.), 6, 134: dinitro- (abst.), 2, 369: hydroxy-, heat of neutralization of (abst.), 8, 21: nitrosulpho-, and some derivatives (abst.), 2, 44: *p*-propyl-, synthesis of (abst.), - - - - 5, 20
- Benzoic acids, dihydroxy-, and iodosalicylic acids (abst.), 5, 29, 59: hydroxy-, heat of formation of (abst.), - - - - 8, 22

- Benzoic anhydride, action of, on pyrrol (abst.), - - - 7, 84  
 Benzoic sulphinide, formation of (abst.), - - - 2, 222  
 Benzoin, action of amides upon, - - - 18, 101  
 Benzonitrile, action of nitrogen trioxide on, - - - 12, 55  
 Benzotrichloride, action of, on primary amines, 1, 524: combinations  
   of, with aromatic bases (abst.), - - - 4, 207  
 Benzoyl derivatives of aromatic amines (abst.), - - - 7, 245  
 Benzoylacetic acid (abst.), - - - 6, 84  
 Benzoylacetic acid, *p*-nitro (abst.), - - - 7, 31  
 Benzoyldiphenylamine, action of phosphorus pentachloride on (abst.), 4, 264  
 Benzureide, - - - 6, 15  
 Benzyl bromide, *p*-, *m*-, and *o*-brom-, (abst.), 1, 282: bromide, *p*-chlor-  
   (abst.), 1, 282: bromide, *p*-iodo- (abst.), 1, 283: chloride, action  
   of zinc powder on (abst.), 8, 181: chloride, *o*-nitro- (abst.), 7, 56:  
   cyanide, nitro-, diazo derivatives of (abst.), 5, 96: derivatives  
   (abst.), 9, 211: ethers of the brominated nitrophenols, and their  
   behavior on reduction (abst.), - - - 7, 245  
 Benzylidene chloride, *p*-nitro- (abst.), - - - 8, 74  
 Benzylidenephthalide and iso-benzalphthalide (abst.), - - - 9, 210  
 Benzylmesitylene (abst.), - - - 5, 121  
 Benzylmethylaniline, 7, 42: green coloring-matter, from, - - - 7, 40  
 Benzylphenol and its derivatives (abst.), - - - 4, 143, 204  
 Benzyl-*o*-thioformate, crystallography of (abst.), - - - 2, 224  
 Berthelot's contributions to the history of chemistry (review), - - 18, 466  
 Beryl, analyses of, - - - 16, 65  
 Beryllium, on (abst.), 12, 154: researches on (abst.), 12, 472: separa-  
   tion of, from iron, 17, 688: spectrum of, etc., (abst.), - - - 5, 115  
 Beryllium borate, - - - P. 2, 114  
 Beryllium: see also Glucinum.  
 Berzelius medal, report on the, - - - 1, 132  
 Bessemer ingot, composition of gases in, 2, 146: process, researches on  
   (abst.), - - - 1, 165  
 Betain in cotton-seed cake (abst.), - - - 7, 58  
 Betulin (abst.), - - - 1, 157  
 Beverages, carbonated, lead in, - - - 11, 99  
 Bile, contributions to the chemistry of (abst.), 1, 493: detection of, in  
   urine (abst.), - - - 1, 105  
 Bile constituents in urine, determination of (abst.), - - - 12, 414  
 Bindheimite, analysis of, - - - 1, 134  
 Biochemistry, importance of the study of, - - - 16, 261  
 Bird's nest, edible, composition of (abst.), - - - 7, 289  
 Bismuth, atomic weight of, 17, 210: (abst.), 12, 151: electrolysis of  
   pyrophosphate of (abst.), 12, 172: in lead in the manufacture of  
   white lead, P. 1, 70: toxic character of (abst.), 10, 77: volumetric  
   determination of, - - - 2, 43; 4, 141, 167  
 Bismuth chloride, double salt of, with potassium bromide (abst.),  
   5, 113: iodide, action of water on (abst.), 4, 142: iodides with

- alkyls and with vegetable bases, 20, 96: nitrate, basic, free from arsenic, preparation of (abst.), 2, 136: sulphide, solubility of, in alkaline sulphides, 18, 1091: sulphide, solubility of, in sodium sulphide, - - - - - 18, 683
- Bismuth, separation of, from antimony, electrolytic, 15, 203, 204: from arsenic, electrolytic, 15, 202, 204: from cadmium, electrolytic, 15, 103: from cobalt, electrolytic, 15, 104, 105: from copper (abst.), 5, 244: from copper, by hydrochloric acid gas, 18, 1036: from lead, by hydrobromic acid gas, 20, 802: from lead, by hydrochloric acid gas, 18, 1034: from lead, 18, 1055: from mercury, electrolytic, 15, 28: from nickel, electrolytic, 15, 104, 105: from tin, electrolytic, 15, 204: from zinc, electrolytic, - - - - - 15, 104, 105
- Bitter principle in fermented liquors brewed without hops (abst.), - 1, 363
- Bituminous rocks, commercial analysis of (abst.), - - - 2, 432
- Blast-furnaces, titanium in, - - - - - 12, 91
- Blast-furnace slags, calculation of, 12, 443: and the fusibility of silicates, - - - - - 12, 189, 307
- Blasting gelatine, - - - - - 15, 552
- Bleaching agents, action of, on writing ink (abst.), 9, 224: powder, on the constitution of (abst.), 5, 237: powder, rate at which it loses chlorine (abst.), - - - - - 10, 90
- Bleaching and dyeing, on the chemistry of (abst.), 6, 197: of oils and grease, improvements in (abst.), - - - - - 8, 43
- Blood, abnormal constituents of, due to leucocythemia, P. 1, 2, 29: coloring-matter of, action of hydrogen dioxide on (abst.), 4, 240: of a diabetic patient, levorotary  $\beta$ -hydroxybutyric acid in (abst.), 9, 113: process for the detection of (abst.), 10, 88: spectroscopic detection of (abst.), 10, 88: and urine, peptones in (abst.), - 8, 231
- Blowing machine (abst.), - - - - - 1, 91
- Blowpipe analysis, some extensions of the plaster-of-Paris method in, 18, 849: bellows, P. 2, 29: experiments upon silver chloride, bromide, and iodide, P. 2, 74: lamp, portable (abst.), 1, 91: lamp and candle, P. 2, 78: reactions with alloys of lead and tin, P. 2, 108: reactions for iodides, bromides, and chlorides, P. 2, 110: reagent, new, 19, (24): reagent, silver iodide as a, - - - - - 7, 132
- Blowpipe, short pocket, - - - - - P. 2, 103
- Boiler feed water, purification of, - - - - - 15, 610
- Boiler scale, presence of oil in, - - - - - 18, 741
- Boilers, peculiar perforations of zinc rods in, - - - - - 13, 286
- Boiling-points, determination of, with small quantities of substance (abst.), 1, 376: etc., of esters of fatty acids (abst.), 8, 228: of esters and ethers of hydroxyacids (abst.), 1, 290; 2, 174: a function of the chemical nature of compounds (abst.), 12, 234: relation of, to vapor densities, 17, 969: of solutions of salts (abst.), - 9, 109
- Bone-black, absorption of sugar by, 1, 509: action of, on salts (abst.), 1, 95: action of, on solutions of pure sugar, 1, 468: decarbonization of, 17, 503: rapid and accurate analysis of, - - - 17, 51

- Bone oil, notes on, 4, 153: purification of (abst.), - - - 6, 136
- Bone phosphate, separation of, from rock phosphate, - - - 18, 491
- Bone phosphate fodder, arsenic in (abst.), - - - 11, 54
- Books received, 17, 916, 997; 18, 100, 196, 310, 414, 474, 564, 660, 747, 848, 1027, 1112; 19, 92, 182, 274, 357, 513, 590, 681, 768, 844, 921, 956; 20, 79, 162, 241, 320, 392, 467, 553, 638, 730, 814, 897, 990
- Borax, employment of, for preserving meat (abst.), 1, 173: volatility of, - - - - - 16, 410
- Bordeaux red, detection of, in wines (abst.), - - - - - 4, 191
- Boric acid, complex acid containing (abst.), 2, 434: determination of (abst.), 9, 11: determination of, in borosilicates (abst.), 6, 239: determination of, in foods, 19, 55, 387: determination of, volumetric (abst.), 10, 43; 20, 288: physiological effect of (abst.), 6, 158: as a preservative, 1, 477: separation of, from phosphoric acid 19, 386: Turner's reaction for (abst.), 1, 528: volatility of, 19, 385
- Boric acid works at Larderello, - - - - - 16, 538
- Borneol, action of carbon disulphide on (abst.), 12, 161: carbonic ether of (abst.), 4, 76: synthesis of an inactive (abst.), - - - 8, 73
- Borneol, ethyl- (abst.), - - - - - 9, 114
- Boron, analogy between, and  $C_2H_2$  (abst.), 6, 158: atomic weight of, 16, 179: determination of, in organic bodies (abst.), 1, 543: quin- equivalence of (abst.), - - - - - 2, 96
- Borosilicates, estimation of boric acid in (abst.), - - - - - 6, 239
- Borotungstates (abst.), - - - - - 2, 432
- Botrytis bassiana* and its crystalline products, - - - - - 16, 860
- Bottle for specimens, - - - - - 18, 412
- Brandy, determination of fusel oil in (abst.), - - - - - 5, 27, 50
- Brasilin and haematoxylin (abst.), - - - - - 7, 60
- Brass, on the analysis of, 16, 133: and bronze, analysis of, 19, 934: speed of dissociation of (abst.), - - - - - 6, 75
- Brazilein, new compounds of (abst.), - - - - - 4, 260
- Brazil nut, proteid of, - - - - - 18, 621
- Bread, detection of alum in (abst.), 4, 188: and flour, analysis of (abst.), - - - - - 1, 566
- British Association for the Advancement of Science, Toronto meeting, 19, 840
- Bromacetone, action of, on ethyl aceto-acetate (abst.), - - - 6, 85
- Bromanil (tetrabromquinone), action of, on monamines, - - - 2, 109
- Bromates, use of, in volumetric analysis (abst.), - - - - - 7, 296
- Bromchloral (abst.), - - - - - 4, 269
- Bromdichloracetic acid (abst.), - - - - - 4, 269
- Bromdiphenylmethane, action of ammonia on (abst.), - - - 2, 436
- Bromides, action of heat on, 5, 139: blowpipe reactions for, - P. 2, 110
- Bromine, action of, on the amides (abst.), 5, 21: action of, on amines in alkaline solution (abst.), 5, 129: action of, on carbon bisulphide (abst.), 5, 26: action of, on quinoline and pyridine (abst.), 4, 242: behavior of pyrotartaric acid with (abst.), 6, 308: behavior of silver haloid salts towards (abst.), 5, 245: carbon compounds of,



- obtained in its manufacture (abst.), 5, 93: new combination of carbon and sulphur with (abst.), 4, 226: expulsion of sulpho group by (abst.), 4, 175: quantitative separation of, from chlorine (abst.), 7, 178: substitution of, for phenolic hydrogen (abst.), 7, 145: use of, for decomposing sulphides (abst.), 9, 35: vapor-density of (abst.), 5, 26: vapor-density of, at yellow heat (abst.), 2, 371
- Bromine vapor, precipitation of manganese by means of (abst.), - 5, 244
- Bromine and chlorine, indirect determination of (abst.), - 4, 161
- Bromine, chlorine, and iodine, estimation of, in the presence of one another (abst.), 6, 49; 18, 688: separation and determination of (abst.), - - - - - 1, 384
- Bromocaffeine, perhalides of, - - - - - 18, 370
- Bromochloroform (abst.), - - - - - 4, 269
- Bromodurene, action of sulphuric acid on (abst.), - - - 9, 215
- Bromoform, preparation of, by electrolysis (abst.), - - - 7, 85
- Bromopurpureo cobalt salts (abst.), - - - - - 1, 295
- Bronze and brass, analysis of, - - - - - 19, 934
- Bronze, phosphor-, analysis of, 19, 396: manufacture of, - - 19, 393
- Bronzes, on the analysis of, - - - - - 16, 133
- Brucine, on the constitution of (abst.), 5, 95: new reaction of, with chromic acid (abst.), 1, 100: physiological action of (abst.), - 7, 116
- Burette with automatic zero, 16, 145; 18, 1075: without graduations (abst.), 9, 17: Mohr's, modification of, 3, 124: mounted, P. 1, 181: portable, - - - - - P. 1, 159
- Burette clamp, 16, 719: filler, 16, 870: holder, - - - - - 14, 15
- Butter, adulterated, simple method for detecting (abst.), 8, 87: analysis of, by Koettstorfer's method (abst.), 1, 567: artificial, manufacture of, P. 1, 154: artificial, specific gravity of oil from (abst.), 4, 188: calorimeter used in detecting adulterations of, 18, 174: detection of falsification in (abst.), 10, 87: detection of foreign fats in (abst.), 1, 359, 567: determination of melting-point of, 15, 661: distinction of, from other fats (abst.), 1, 568: effect on, of feeding cotton-seed foods, 13, 134: estimation of coloring-matter in, 9, 41: examination of, 7, 134: examination of, by polarized light (abst.), 1, 358: glucose in, 20, 201: influence of food and animal idiosyncrasy on the composition of (abst.); 12, 16: modification of Hehner's method of testing (abst.), 1, 86: rancidity of (abst.), 8, 108: a sample of old, 9, 3: separation of coloring-matters in, 9, 76, 98: studies on (abst.), 8, 107: test for adulteration in (abst.), 8, 40: testing of, by means of refractometer (abst.), 9, 14: viscosimetric examination of, - - - - - 17, 719
- Butter analysis (abst.), 11, 54: on Koettstorfer's method of (abst.), 1, 568; 6, 311: methods of (abst.), 8, 28: relation of cocoanut oil to methods of, - - - - - 7, 188
- Butter fat (abst.), 12, 118: commercial, adulterations of (abst.), 1, 569: determination of volatile and insoluble fatty acids in,

- 16, 673: method for analysis of (abst.), 1, 568: and its substitutes, examination of, - - - - - 8, 155
- Butter and its falsifications, a (*conversazione*), - - - - - 8, 247
- Butter and lard, detection of foreign fats in, - - - - - 19, 796
- Butter and milk, determination of solids and fat in (abst.), - - - - - 10, 27
- Butter and tallow, determination of specific gravity of (abst.), - - - - - 8, 205
- Butter and its substitutes (abst.), - - - - - 8, 276
- iso*-Butaldehyde, action of potassium carbonate on (abst.), 1, 292: condensation products of, obtained by means of alcoholic potassium hydroxide (abst.), - - - - - 5, 94
- Butyl chloracetate (abst.), 8, 180: iodide, allyl iodide, and zinc, action of, on acetone (abst.), 7, 58: iodide, tertiary, action of, on isobutylene (abst.), - - - - - 2, 54
- iso*-Butyl chloride, action of, on benzene in the presence of aluminum chloride (abst.), - - - - - 6, 191
- iso*-Butyl-*o*-amidotoluenes, isomeric (abst.), - - - - - 7, 88
- iso*-Butylbenzene, *p*-amido-, derivatives of (abst.), - - - - - 10, 19
- iso*-Butylene, action of tertiary butyl iodide on (abst.), - - - - - 2, 54
- iso*-Butylenebromide, behavior of sodium phenylmercaptide with (abst.), - - - - - 12, 229
- Butyrellite, composition of (abst.), - - - - - 9, 6
- Butyric acid, pure (abst.), - - - - - 9, 6
- Butyric acid,  $\beta$ -amido- and  $\beta$ -anilido- (abst.), 2, 367:  $\beta$ -hydroxy-, levorotary, in the blood of a diabetic patient (abst.), - - - - - 9, 113
- Bynedeatin, a globulin of malt, - - - - - 18, 542
- Bynin, a malt proteid, - - - - - 18, 552
- Cacodylic acid, physiological effects of (abst.), - - - - - 1, 160
- Cactaceae*, the chemistry of, - - - - - 18, 624
- Cadmium, atomic weight of, 18, 205; 19, 364: atomic weight of, electrolytic determination of, 18, 1016: determination of, in presence of copper (abst.), 4, 167: electrolysis of pyrophosphate of (abst.), 12, 171: electrolytic determination of, 19, (26), 379, 513, 870; 20, 280: (abst.), - - - - - 1, 330, 331, 391
- Cadmium, separation of, from antimony, electrolytic, 15, 200, 202: from arsenic, electrolytic, 15, 201, 202: by hydrobromic acid gas, 20, 807: by hydrochloric acid gas, 18, 1039: from bismuth, electrolytic, 15, 103: from cobalt, electrolytic (abst.), 12, 174: from copper, electrolytic, 15, 102: (abst.), 8, 277: from iron, electrolytic (abst.), 12, 174: from manganese, electrolytic (abst.) 12, 174: from nickel, electrolytic (abst.), 12, 174: from silver, electrolytic, 16, 424: from tin, electrolytic, 15, 201, 202: from zinc, electrolytic (abst.), 7, 296: (abst.), 8, 277: electrolytic (abst.), - - - - - 12, 174
- Cadmium sulphide, determination of (abst.), - - - - - 9, 35
- Caffeic acid, - - - - - 20, 42
- Caffeine (abst.), 4, 174: action of Wagner's reagent upon, 18, 331: determination of, 19, 279: new method for estimation of, 18, 338: notes on the estimation of, 18, 978: transformation of xanthine

- into (abst.), - - - - - 4, 264
- Caffeine compound in kola, 19, 63: perbromides, 18, 356: perhalides, 18, 347: periodide, - - - - - 18, 350
- Caffeotannic acid, - - - - - 20, 42
- Calcite from York, Pa., - - - - - 15, 543
- Calcium, determination of, as carbonate after precipitation as oxalate, P. 2, 126: determination of, by photometric method, 18, 661: determination of, in the presence of excess of aluminum, phosphoric acid, etc. (abst.), 6, 169: dissociation of (abst.), - 2, 226
- Calcium salts of, volatility, of, 19, 156: spectrum of (abst.), - 1, 583
- Calcium acetate, crude, determination of acetic acid in (abst.), 1, 367: acetate, crude, valuation of (abst.), 1, 582: acetate, manufacture and analysis of, 4, 94: acid tartrate, note on, 13, 144: bromide, the hydration of, 16, 621: carbide, estimation of sulphides in, 18, 740: carbide, the manufacture of, 18, 311: carbide, properties of, 17, 306: carbonate, precipitation of (abst.), 1, 334: chloride, compound of, with normal propyl alcohol (abst.), 12, 156: chloride and sulphuric acid, relative values of, as desiccating agents (abst.), 6, 98: ferrocyanide, use of organic bases in preparing, 17, 927: hydroxide as a precipitant of suspended clay, 13, 100: iodide, the hydration of, 16, 621: orthophosphate, see Tricalcium phosphate: oxide, action of, in expelling ammonia from salts and amines (abst.), 6, 27: oxide, determination of, in quicklime, 16, 721: phosphate, action of sulphuric acid on (abst.), 2, 96: phosphate, properties of (abst.), 2, 133: propylideneacetate, 17, 23: sulphate, hydrated, influence of temperature on the composition of (abst.), 10, 78: sulphide with violet phosphorescence, preparation of (abst.), 8, 199: sulphite, stalactites and stalagmites of, 17, 242: thiosulphate, origin of (abst.), 7, 28: trinitride, - - - - - 20, 228
- Calculi, analyses of, 4, 215: intestinal, of horses, analyses of - 1, 430
- California wines, some characteristics of, - - - - - 16, 597
- Calorimeter, bomb (abst.), 7, 146: bomb, as a combustion furnace for ultimate analysis (abst.), 10, 172: bomb, determination of the thermal value of, 19, 439: for heats of combustion (abst.), 1, 586: respiration, description of a new, 20, 681: Thompson's industrial value of (abst.), - - - - - 10, 89
- Calorimetric measurements (abst.), 10, 15: method, a (abst.), - 1, 295
- Calycanthus glaucus*, analysis of the seed of (abst.), - 12, 15
- Camomile, Roman (*Anthemis nobilis*), anthemene from (abst.), 6, 191: oil of, organic acids obtained in the saponification of (abst.), 1, 238: oil of, the separate constituents of (abst.), - 1, 238
- Camphanic acid, constitution of (abst.), - - - - - 7, 82
- Camphenol, active, and ethylborneol (abst.), - - - - - 9, 114
- Campholurethane (abst.), - - - - - 4, 235
- Campholurethanes, two stereoisomeric (abst.), - - - - - 6, 163
- Camphonitrophenol, isomeric with nitrocamphor (abst.), - - 12, 71

- Camphor, Borneo: reclamation of priority (abst.), 1, 277: from *Ledum palustre* (abst.), 6, 95: quantitative determination of (abst.), 12, 477: peppermint, and some of its derivatives (abst.), - 4, 144
- Camphor chlorides (abst.), 2, 60: chloronitrated, isomerism of (abst.), 6, 131: dichloride (abst.), 4, 233: peroxide and barium camphorate (abst.), - - - - - 6, 91
- Camphor group, compounds of (abst.), 2, 179: motions and electricity, connections between, P. 1, 2, 66: motions, note on, 7, 13: oil, Japanese (abst.), - - - - - 6, 313
- Camphoric acid, note on (abst.), 12, 161: and its amide, action of dehydrating bodies upon (abst.), - - - - - 1, 397; 2, 187
- Candle material, determination of melting-point and composition of, 16, 825
- Candle and lamp for blowpipe, - - - - - P. 2, 78
- Cane juice and raw sugar, occurrence of aconitic acid in, - P. 1, 220
- Cane sugar, action of acetic and hydrochloric acids on, 17, 320: detection of, in glucose 2, 111. 428: determination of glucose in, 1, 2: determinations of mixtures of, with milk sugar (abst.), 7, 149: determination of, in presence of glucose, 17, 312: exact determination of, by polariscope, 1, 2: refined, detection of anhydrous glucose in, - - - - - 5, 41
- Canned food, occurrence of tin in, - - - - - 13, 200
- Canned goods, collecting and analyzing gases in, - - - - - 19, 733
- Capric acid, dibrom- (abst.), - - - - - 1, 292
- Caproic acid, normal, electrolysis of (abst.), - - - - - 8, 274
- Caprolactone (abst.), - - - - - 4, 270; 6, 162
- Caprolactonic acid, carboxy-, and allylsuccinic acid (abst.), - 5, 69
- Capronic acid occurring in resin oil (abst.), - - - - - 4, 228
- Caprylbenzene, *p*-amido- (abst.), - - - - - 7, 176
- Caprylidene, an acetylene hydrocarbon (abst.), - - - - - 9, 6
- Caramel, identification of (abst.), - - - - - 7, 62
- Carballylic acid, Guinochet's isomeric (abst.), - - - - - 12, 166
- Carbamido-palladious chloride (abst.), - - - - - 2, 137
- Carbide of iron, chromium and molybdenum, 17, 799: of iron, chromium and tungsten, - - - - - 17, 800
- Carbides of iron and chromium, - - - - - 17, 791
- Carbinol, allyldiethyl-, 2, 54: allyldipropyl-, 2, 54: diallyl-*iso*-propyl-, 2, 177
- Carbohydrate, new crystallizable (abst.), 12, 352: fermentable (abst.), 10, 78
- Carbohydrates, acetyl compounds of (abst.), 2, 225: with chromates, behavior of, towards light (abst.), 1, 493: combustion of, by means of chromic acid (abst.), 7, 293: estimation of, in starch products, 19, 698: in food-stuffs, determination of, 19, 183, 347: formation of fat from, in carnivora (abst.), 8, 86: heats of combustion of, 20, 305: influence of, on the putrefaction of albumin (abst.), 8, 230: physiology of, in the animal system (abst.), 6, 159, 233: of the sweet potato (abst.), 12, 351: of wheat, insoluble, - 19, 291
- Carbolic acid. See Phenol.
- Carbon, absorption of chlorine by (abst.), 7, 148: atomic weight of,

- 18, 212: atomic weight of, a correction, 20, 163: atomic weight of, by combustion of diamond (abst.), 4, 237: behavior of, toward iron at high temperatures (abst.), 8, 72: new combination of, with sulphur and bromine (abst.), 4, 226: and its compounds, chemical action with (abst.), 6, 286: on the condition in which it exists in steel (abst.), 5, 114: gravimetric determination of minute quantities of (abst.), 1, 108: electrolysis of, in ammonia (abst.), 8, 178: in gases evolved by the solution of iron in acids (abst.), 10, 25: an impurity in hydrogen affecting determinations of atomic weight, 12, 276: new mixture for separating, from iron and steel (abst.), 10, 156: pure, for electric light (abst.), 4, 235: the segregation of, in a piece of boiler plate, - - - - - 20, 614
- Carbon compounds, brominated (abst.), 5, 93: heats of solution of, 18, 146: measuring heat of combustion of (abst.), 7, 146: relation of molecular structure of, to absorption spectra (abst.), - - - 4, 144
- Carbon, determination of, in aluminum, 18, 771: in cast iron, 5, 56: (abst.), 1, 88; 6, 193: in iron (abst.), 10, 155: in iron, influence of sulphur on Eggertz' method for (abst.), 10, 115: in pig iron, 18, 1087: in iron and steel, 15, 213; 19, 95: (abst.), 4, 165; 12, 352: in iron and steel, colorimetric (abst.), 1, 371: in iron and steel, gas volumetric (abst.), 10, 68: in iron and steel, standard method for, 15, 526: (combined), in iron and steel, P. 2, 72: in steel, 15, 113, 283; 18, 223: in steel, by combustion in current of air, 15, 114: in steel, by combustion in the wet way, 20, 243: in steel, by Eggertz' method (abst.), - - - - - 1, 271
- Carbon, determination of, organic, sources of error in, 20, 510, 528: in volatile compounds (abst.), 9, 220: in the wet way (abst.), 12, 477: in waters, - - - - - 9, 162
- Carbon, determinations of, in standard samples of iron and steel, 15, 450
- Carbon dioxide, apparatus for preparing (abst.), 9, 175: in atmosphere, normal amount of (abst.), 4, 232: density of, 20, 170: detection of minute quantities of (abst.), 9, 199: hydrate of (abst.) 5, 64: liquid, under regulated pressure (abst.), 6, 25: as a measure of the efficiency of ventilation, 15, 572: occurrence of, in cavities of topaz, 3, 41: reactions of (abst.), 7, 286: reduction of, by phosphorus at ordinary temperatures, 1, 230: reduction of, by phosphorus at ordinary temperatures, correction, 1, 452: solid (abst.), 6, 307: solvent action of solution of, - - - - - 3, 26
- Carbon dioxide, determination of (abst.), 12, 354: by absorption 18, 1: by absorption with barium hydroxide, in potash bulbs, 17, 247: apparatus for (abst.), 10, 67: apparatus for, gravimetric, 16, 204: apparatus for, volumetric, 15, 614: in coal gas (abst.), 5, 112: comparison of rapid methods for, 19, 859: by loss of weight, P. 1, 127: in water, by titration, - - - - - 13, 98
- Carbon disulphide (abst.), 4, 252: action of bromine on (abst.), 5, 26: action of, on menthol and borneol (abst.), 12, 161: action of, on *p*-nitraniline (abst.), 4, 264: action of phosphonium iodide on

- (abst.), 2, 171: action of, on silicon (abst.), 4, 240: detection of, in coal gas, 3, 38: some reactions of (abst.), 7, 286: vapor of, absorbents for (abst.), - - - - - 7, 286
- Carbon minerals, analyses of, - - - - - 13, 143
- Carbon monoxide, action of, on alkaline hydroxides at high temperatures (abst.), 2, 367: behavior of, with air and moist phosphorus (abst.), 6, 75: comparison of rapid methods for determining, 18, 866: constitution of (abst.), 18, 286: conversion of, into carbon dioxide by nascent oxygen, 5, 78: determination of, by explosion in technical gas analysis, 20, 343: heat of combination of (abst.), 1, 279: and hydrogen, relative affinity of oxygen for (abst.), 1, 164: limits to detection of (abst.), 1, 556: oxidation of, by air over phosphorus at ordinary temperatures, 1, 232: poisoning by, 10, 176: preparation of (abst.), - - - - - 5, 64
- Carbon oxydichloride. See Carbonyl chloride.
- Carbon oxysulphide, transformation of, into urea and thiourea (abst.), 4, 236
- Carbon and silicon, new compounds of (abst.), - - - - - 4, 237
- Carbonate, determination of caustic alkali in presence of (abst.), - - - - - 4, 165
- Carbonate, double, of potassium and sodium (abst.), - - - - - 10, 77
- Carbonates, crystallized, methods for preparation of (abst.), 9, 33: in living plants (abst.), - - - - - 8, 21
- Carbonated beverages, poisoning by lead in, - - - - - 11, 99
- Carbonic acid, hydrated, composition of (abst.), 4, 236: in water and its effect on lead pipes (abst.), - - - - - 10, 71
- Carbonyl chloride, action of, on *o*-diamines (abst.), 12, 228: action of, on diazo-amido compounds (abst.), 4, 175: action of, on glycolchlorhydrin (abst.), - - - - - 7, 144
- Carborundum, - - - - - 15, 411
- Carbostyryl (abst.), - - - - - 4, 230
- Carbotriphenyltri-amine, constitution and synthesis of (abst.), - - - - - 1, 166
- Carboxycaprolactonic acid and allylsuccinic acid (abst.), - - - - - 5, 69
- Carboxylic acids, occurrence of, in coal tar (abst.), - - - - - 7, 249
- Carminaphte (of Laurent), method of preparing (abst.), - - - - - 1, 272
- Carotin (abst.), - - - - - 8, 204
- Carvacrol, occurrence of, in the essential oil of *Satureia hortensis* (abst.), - - - - - 5, 24
- Cascara sagrada*, the chemistry of, - - - - - 20, 534
- Casein, determination of, by precipitation with sulphuric acid (abst.), 8, 61: determination of, study of methods for, 15, 635: sulphur in (abst.), - - - - - 8, 60
- Casein and fat, determination of, in feces, 19, 877: 20, 101: determination of, in infant feces, - - - - - 20, 765
- Cassava, some products of, - - - - - 15, 78
- Castor bean, proteids of, - - - - - 18, 621
- Castor oil, presence of a pimelic acid in the oxidation products of (abst.), 8, 110: solid residue from the distillation of, *in vacuo*, 5, 4
- Cattle foods, recent progress in analysis of, - - - - - 16, 174

- Celestine, reproduction of, by wet process (abst.), - - - 10, 113
- Cells, living, reducing properties of (abst.), - - - 4, 176
- Cell-contents of certain plants, researches on (abst.), - - - 10, 101
- Cellulose, action of solutions of, on polarized light (abst.), 6, 93:  
determination of, 19, 304: formula of (abst.), 2, 173: oxidation of  
(abst.), 5, 92; 6, 197: separation of, from wheat, - - - 19, 296
- Cement, conversion of lime mud into (abst.), 10, 91: decomposition of,  
by water (abst.), 6, 174: chemical and physical examination of,  
15, 181; 16, 161, 283, 323, 374: detection of adulterations in  
(abst.), - - - 6, 290
- Cereals, determination of crude fiber in, - - - 19, (39)
- Ceresine and ozokerite from Galicia, - - - P. 1, 121
- Ceria, separation from other earths, - - - 16, 650
- Cerite metals, on (abst.), - - - 5, 113
- Cerium, atomic weight of, 18, 210; 20, 167: (abst.), 6, 306: contribu-  
tions to the chemistry of, 16, 649: separation of, from iron, - 20, 846
- Cerium compounds, contributions to chemistry of (abst.), 4, 203:  
group, specific gravities and atomic volumes, etc. (abst.), 1, 295:  
metals, contributions to chemistry of (abst.), - - - 4, 176
- Cerium acid sulphate (abst.), - - - 12, 70
- Cesium, atomic weight of (abst.), - - - 1, 106
- Cesium fluoride, 18, 57: columbium fluoride, 18, 59: barium ferro-  
cyanide, 20, 33: barium ruthenocyanide, 20, 31: bromoselenate,  
20, 571: ruthenium nitroschloride, 16, 395: tantalum fluoride,  
18, 59: titanium fluoride, 18, 60: trinitride, - - - 20, 227
- Cevadine, chemistry of (abst.), - - - 1, 553
- Champagne wines, clarification of (abst.), - - - 4, 234
- Charcoal, animal, absorption of sugar by, 1, 509: animal, decomposi-  
tion of salt solutions by (abst.), 1, 95: preparation of, for the  
manufacture of gunpowder (abst.), - - - 9, 190
- Charcoal borers, - - - P. 2, 104
- Chart, alchemical, - - - 13, 293
- Cheese, composition of, P. 1, 2, 63: composition of American cheddar, 15, 605
- Chemical analysis, treatment of precipitates in (abst.), 2, 43: com-  
pounds, a few physical properties of (abst.), 6, 43: dynamics, ex-  
planation of Gladstone and Tribe's law in (abst.), 7, 26: energy,  
15, 421: force, relative intensity of, 12, 292: industry of United  
States, 15, 563: problems of to-day (address by Victor Meyer),  
11, 101: science, immediate work in, 14, 190: societies, early  
American, 19, 717: studies, application of graphic methods in,  
14, 128: terms, spelling and pronunciation of, 14, 63: theory,  
foundations of, - - - 15, 430
- Chemical Congress. See Congress of Chemists.
- Chemical literature, international index to, 15, 574: report of com-  
mittee on, 15, 309: report of committee on indexing, 11, 121;  
- - - 18, 940; 19, 766
- Chemical nature of compounds, boiling-points a function of (abst.), 12, 234

- Chemist, the American (presidential address), - - - 14, 331
- Chemists, industrial, education of, - - - 15, 481, 627
- Chemistry, experimental, in eighteenth century (notice), 13, 262: industrial, progress in (review), 19, 894: quantitative work for beginners in, 16, 59: teaching of, - - - 15, 463
- Chemistry and physics, borderland between (presidential address), 13, 11: connection between (abst.), - - - 8, 178
- Chevallot's process for water-proofing (abst.), - - - 9, 17
- Chicago Section, meetings of, - - - 17, (49), (68)
- Chicken cholera, 2, 214: and virulent diseases (abst.), - - - 2, 79
- Chicle, notes upon, - - - 1, 50
- Chinese liquor, analysis of a (abst.), - - - 7, 243
- Chloracetone, action of, on ethyl acetoacetate (abst.), - - - 6, 85
- Chloral, action of chlorine on (abst.), - - - 8, 36
- Chloral hydrate (abst.), 1, 401: answer to Berthelot's remarks on (abst.), 1, 403: combination of hydrogen phosphide with (abst.), 8, 199: electrolysis of (abst.), 8, 20: heat of solution of, in water, alcohol, chloroform, and toluene, 18, 156: remarks on paper of Wurtz on (abst.), - - - 1, 402
- Chlorates, estimation of, by the zinc copper couple (abst.), - - - 10, 26
- Chlorbromal (abst.), - - - 4, 269
- Chlorethyl bisulphide, constitution of (abst.), - - - 10, 15
- Chlorhydrin, propylene- (abst.), - - - 7, 118
- Chlorhydrins, aliphatic, action of thiocyanates on, - - - 20, 668
- Chloric and nitric acids, color reactions of, with certain aromatic bodies, - - - 19, 156
- Chlordibromacetic acid (abst.), - - - 4, 269
- Chlorides, action of heat on, 5, 144: blowpipe reactions for, P. 2, 110: comparative antiseptic value of (abst.), 9, 190: double, molecular volume of (abst.), 6, 232: test for, in the presence of bromides and iodides (abst.), 7, 209: variations of solubility of some, in the presence of hydrochloric acid (abst.), - - - 8, 163
- Chlorinated derivatives of ethyl acetate (abst.), - - - 10, 17
- Chlorine, absorption of, by carbon and its combination with hydrogen (abst.), 7, 148: action of, on anhydrous chloral (abst.), 8, 36: action of, on certain metals (abst.), 5, 99: action of, on organic compounds containing sulphur (abst.), 6, 133: action of, on phloroglucinol (abst.), 12, 159: action of, on the sulphides of alcoholic radicals (abst.), 10, 16: action of, on sulphonic compounds (abst.), 4, 263: apparatus for preparing (abst.), 12, 155: behavior of hydrogen dioxide towards (abst.), 2, 60: contributions to knowledge of (abst.), 2, 371: decomposition of aqueous solutions of, in sunlight (abst.), 7, 120: density of, answer to Seelheim's remarks on, 1, 481: density of, at high temperatures, note on, 1, 453: derivatives of the aliphatic series (abst.), 10, 16: detection of free, in hydrochloric acid (abst.), 12, 73: dissociation of (abst.), 1, 310: and hydrochloric acid, influence of the ammonia



- soda process on the value of (abst.), 6, 174: the Le Sueur process for production of, 20, 868: loss of, from bleaching-powder (abst.), 10, 90: manufacture of, from magnesium chloride (abst.), 9, 224; 10, 85: presence of, in scapolites (abst.), 1, 391: acetate, non-existence of (abst.), 1, 161: monoxide (abst.), - - - 7, 244
- Chlorine, determination of, in gases from chemical works (free and combined) (abst.), 4, 161: gravimetric (abst.), 4, 161: in hydrochloric acid (free), 1, 18: (abst.) P 2, 149: indirect (abst.), 4, 161: in presence of bromine and iodine, 18, 688; (abst.), 1, 384; 2, 368; 6, 49: volumetric (abst.), 7, 209: in water, - P. 2, 3; 16, 71
- Chlorine, separation of, from bromine (abst.), 7, 178: from iodine, in the dry way (abst.), - - - 7, 32
- Chlorlactic acid, formation of, from glyceric acid (abst.), - - 1, 289
- Chlormalonic acid and derivatives (abst.), - - - 4, 270
- Chlornaphthol and dichlornaphthalene from  $\beta$ -naphtholsulphonic acid (abst.), - - - 4, 229
- Chlorobromoform (abst.), - - - 4, 269
- Chlorocaffeine, perhalides of, - - - 18, 364
- Chloroform from acetone made from acetic acid, 18, 231: and acetone, acid obtained by action of alcoholic potassium hydroxide on (abst.), 9, 102: action of, on  $\beta$ -naphthol (abst.), 4, 241: action of quinoline on (abst.), 5, 66: detection of alcohol in (abst.), 1, 582: preparation of, by electrolysis (abst.), - - - 7, 85
- Chloronitrides of phosphorus, - - - 19, (43)
- Chlorophyll (abst.), 2, 90; 7, 141: new coloring-matter from (abst.), 6, 133: preparation of pure (abst.), 6, 89: probable constitution of (abst.), 6, 238: spectroscopic study of (abst.), - - 4, 257
- Chlorostannates of rare earths (abst.), - - - 1, 278
- Chlorosulphonic acid, behavior of, with non-metals and with tin (abst.), 4, 261: preparation of (abst.), - - - 5, 126
- Chocolate and cocoa, determination of theobromine in (abst.), - 1, 365
- Cholera, formation of ptomaines in (abst.), - - - 7, 80
- Cholesterin, contributions to our knowledge of (abst.), - - 1, 394
- iso*-Cholesterin, specific rotation of (abst.), - - - 1, 380, 395
- Cholic acid, empirical formula of (abst.), - - - 10, 37
- iso*-Cholic acid (abst.), - - - 5, 21
- Chondrin, on the chemistry of (abst.), - - - 1, 397
- Chromammonium compounds, contributions to the chemistry of (abst.), 2, 290
- Chromates, alkaline, titration of (abst.), 4, 165: and dichromates (abst.), 1, 294: influence of, on glue in the light (abst.), 1, 493: normal, detection of, in dichromates (abst.), - - - 1, 89
- Chrome alums, accommodation of (abst.), 2, 370: iron, analysis of (abst.), 12, 117: iron ore, disintegration of (abst.), 1, 104: ores, determination of chromium in, 17, 327: ores, disintegration and solution of (abst.), - - - 1, 558
- Chromic acid, combustion of carbohydrates by means of (abst.), 7, 293: free, detection of, in dichromates (abst.), 1, 89: prepara-

- tion of crystallized (abst.), - - - - - 9, 2 2
- Chromic anhydride, reaction of, with sulphuric acid (abst.), - - - 4, 170
- Chromium, action of hydrogen dioxide on (abst.), 10, 192: electrolysis of pyrophosphate of (abst.), 12, 172: equivalent of (abst.), 6, 127: error in analysis of iron ores due to presence of (abst.), 4, 166: metallic, new process for preparing (abst.), 1, 276: oxidation of the sesquioxide of, and determination of (abst.), - - - 6, 136
- Chromium amalgam (abst.), 1, 276: compounds corresponding to potassium ferri- and ferrocyanides (abst.), 7, 140: oxides, action of hydrogen peroxide on (abst.), 8, 162: salts, nature of change from violet to green in solutions of, 20, 484: sulphate, preparation of (abst.), 6, 78: sulphate, crystalline, - - - - - 15, 151
- Chromium black on wool (abst.), - - - - - 1, 290
- Chromium, determination of (abst.), 4, 166; 8, 77: in aluminum alloys, 18, 774: in chrome ore, 17, 327: colorimetric, for small quantities, 20, 454: in iron and steel (abst.), 10, 66: volumetric (abst.), - - - - - 1, 324, 325
- Chrysaniine (abst.), - - - - - 6, 237; 7, 83
- Chrysazine series, anthracene compounds of (abst.), - - - 1, 290
- Chrysene and related hydrocarbons, synthesis of (abst.), - - - 12, 160
- Chrysophenol (abst.), - - - - - 6, 237
- Chymosin, active principle of rennet, - - - - - 10, 98
- Cider and vinegar, - - - - - 7, 102
- Cinchona bark, determination of alkaloids in (abst.), 1, 552: new alkaloid from (abst.), - - - - - 4, 168
- Cinchonidine, contributions to the knowledge of (abst.), 2, 184: detection of, in quinine sulphate (abst.), - - - - - 8, 233
- Cinchonine, action of sulphuric acid on, in the presence of oxalic acid (abst.), 10, 83: composition of (abst.), 2, 184: oxidation products of (abst.), 1, 166; 2, 185: researches on optical isomers of (abst.), 10, 80
- Cinchonine chloride, action of phosphorus pentachloride and phosphorus oxychloride on (abst.), - - - - - 2, 227
- Cinchotone, behavior and occurrence of (abst.), - - - - - 4, 267
- Cincinnati Section, meetings of, 17, (25), (27), (31), (34), (42), (48), (65), (72); 18, (5), (33), (60), (68), (72), (93), (126); 19, (13), (18), (20), (24), (32), (39), (65); 20, (6), (24), (46), (63), (81), (107)
- Cinnamic acid, addition products of (abst.), 1, 242: condensation product of, with gallic acid (abst.), 9, 196: on Schwartz's synthesis of (abst.), - - - - - 5, 65
- Cinnamic acid, chloro- (abst.), 5, 22: dinitro- (abst.), - - - 5, 242
- Cinnamic acids, brom-, action of two isomeric, with sulphuric acid (abst.), - - - - - 4, 173
- iso*-Cinnamic acid present in the alkaloids accompanying cocaine (abst.), - - - - - 12, 161
- Cinnamic aldehyde from pancreatic digestion of fibrin (abst.), - - - 2, 368
- Cinnoline derivatives (abst.), - - - - - 5, 239
- Citraconic acid, brom- (abst.), - - - - - 1, 280; 2, 88

- Citrate solution, preparation of a neutral, - - - - - 20, 585  
 Citrene, action of formic acid on (abst.), - - - - - 10, 113  
 Citric acid, detection of (abst.), 7, 180: and its homologues (abst.),  
     1, 173: in lemon juice (abst.), 10, 195: occurrence of, in seeds of  
     leguminous plants (abst.), 7, 30: in sorghum juice, 15, 144: sur-  
     face-tension of solutions of, - - - - - 20, 129  
 Citric and tartaric acids, on (abst.), - - - - - 5, 231  
 Clamp for burette, 16, 719: universal, - - - - - 17, 611  
 Clausius-Williamson hypothesis, validity of (abst.), - - - 6, 73  
 Clay, analysis of (abst.), 9, 35: suspended, precipitation of, by alumi-  
     num, ferric, or calcium hydroxides, - - - - - 13, 100  
 Coagulation of colloid solutions, on the speed of, - - - 20, 375  
 Coal, analysis of (abst.), 6, 128: analysis of, preliminary report of  
     committee on, - - - - - 20, 281  
 Coal, behavior of nitrogen in, during destructive distillation (abst.),  
     5, 95: coking of, in the Simon-Carvés ovens, by-products in (abst.),  
     7, 212: determination of nitrogen in (abst.), 5, 95: determination  
     of sulphur in, P. 1, 97: determination of sulphur in, study of  
     methods for, 20, 630: distillation of (abst.), 10, 45: distillation of,  
     and recovery of hydrocarbons from the gas (abst.), - - - 6, 27  
 Coal gas, estimation of hydrogen sulphide in, by weight, 4, 177: pro-  
     cess for desulphurizing (abst.), - - - - - 9, 223  
 Coals, analysis of different varieties of (abst.), 9, 198: determination  
     of heating effects of, - - - - - 17, 843  
 Coal tar. See Tar.  
 Coal tar colors, effect of, on digestion, - - - - - 18, 1092  
 Cobalt, alloys of, with copper (abst.), 7, 285: atomic weight of, 16, 183;  
     17, 207; 18, 202; 20, 166: decomposition of (abst.), 10, 180: deter-  
     mination of, by precipitation as oxalate (abst.), 1, 327: determina-  
     tion of, volumetric, 20, 173: electrolysis of pyrophosphate of  
     (abst.), 12, 169: test for (abst.), - - - - - 1, 109  
 Cobalt amalgam (abst.), 1, 276: chloride, difference in color of hy-  
     drates of (abst.), 6, 307: nitrate as an indicator for ferrocyanide, 17, 474  
 Cobalt salts, bromopurpureo- (abst.), - - - - - 1, 295  
 Cobalt, separation of, from aluminum, as oxalate (abst.), 1, 529: from  
     arsenic, by hydrobromic acid gas, 20, 808: from arsenic by hydro-  
     chloric acid gas, 18, 1042: from bismuth, electrolytic, 15, 104:  
     from iron, as oxalate (abst.), 1, 529; from nickel (abst.), 4, 166:  
     7, 250: from zinc (abst.), - - - - - 8, 277; 9, 9  
 Cobaltocyanides, preparation of (abst.), - - - - - 1, 272  
 Cobaltous chloride, compounds of, with aniline, etc. (abst.), - 1, 165  
 Cocaine, discovery of (abst.), 7, 88: presence of isocinnamic acid in  
     the alkaloids accompanying (abst.), - - - - - 12, 161  
*d*-Cocaine (abst.), - - - - - 12, 164  
 Cochineal, fat in (abst.), - - - - - 8, 66  
 Cocoa and chocolate, determination of theobromine in (abst.), - 1, 365  
 Coconut, the proteids of, - - - - - 18, 621

- Cocoonut oil, relation of, to methods of butter analysis, - - 7, 188  
 Cod liver oil and vegetable oils, examination of (abst.), - - 10, 70  
 Coffee decoctions, solubility of arsenious oxide in, - - P. 1, 2, 56  
 Coffee, roasted, examination of (abst.), - - - 4, 189  
 Cohesion, nature and chemical signification of (abst.), - - - 2, 57  
 Coke, determination of nitrogen in (abst.), 5, 95: determination of sulphur in (abst.), 10, 155: from petroleum, substances contained in (abst.), - - - - 2, 435  
 Coking coal in the Simon-Carvés ovens, by-products in (abst.), - 7, 212  
 Colchicine, detection of, in toxicological cases (abst.), - - 1, 106  
 Colloid solutions, speed of coagulation in, - - - 20, 375  
 Colophony, methyl alcohol from the dry distillation of (abst.), 5, 123: products of distillation of (abst.), - - - 4, 233  
 Color, estimation of, by photography (abst.), 10, 86: estimation of, in potable water, 18, 484: estimation of, in water, P. 2, 8: gray, production of, on fibre by oxidation of aromatic amines and diamines (abst.), - - - - 8, 231  
 Color and color changes, some regularities of, - - - P. 1, 128  
 Colors, artificial, progress in manufacture and use of 15, 456: azo-, spectra of, 6, 117, 149: from coal tar, influence of, on digestion, 18, 1092: indigo, examination of (abst.), 9, 120: of natural water, measurement of, 18, 264: purple, derived from gold (abst.), - 7, 76  
 Coloration of coal fire by common salt (abst.), - - - 10, 179  
 Color comparer for estimation of combined carbon in iron and steel, P. 2, 72  
 Colorimeter (abst.), 1, 91: for water analysis (abst.), - - - 4, 163  
 Colorimetric test for copper, improvements in, - - - 19, 24  
 Colorimetry, source of error in (abst.), - - - 1, 379  
 Coloring matter from benzylmethylaniline, 7, 40: derived from chlorophyll (abst.), 6, 133: estimation of, in butter and its substitutes, 9, 41: of natural waters, 18, 68: of *Palmella cruenta* (abst.), 1, 403: of Persian berries (abst.), 2, 62: of *Sophora japonica*, etc., 4, 206: in yolk of eggs (abst.), - - - - 12, 165  
 Coloring matters from action of diazo-compounds on phenols, 2, 236: from aromatic nitro substitution products, etc. (abst.), 4, 205: in butter, etc., method of separating, 9, 76, 98: in butter, reactions of, 9, 98: red, determination of, in wines (abst.), - - - 4, 191  
 Columbian Exposition, chemical notes from - - - 15, 250, 312  
 Columbium, derivatives of, 18, 38: qualitative reactions of, 18, 50: separation of, from tantalum, - - - - 18, 48  
 Columbium oxide, action of carbon tetrachloride on, 18, 532: action of phosphorus pentachloride on, - - - - 18, 61  
 Columbus Section, meetings of, - - - - 20, (17), (47)  
 Combustion, complete, of bodies combustible with difficulty (abst.), 4, 269: of gunpowder, researches upon (abst.), 1, 399: luminous incomplete, of ether (abst.), 4, 259: under high pressure (abst.), 12, 349  
 Combustion furnace, tiles for (abst.), 10, 68: use of calorimetric bomb for, in ultimate analysis (abst.), - - - - 10, 172

- Compound salts, crystallization from saturated solutions of (abst.), 4, 261
- Compressibility of gases, researches on (abst.), - - - 1, 172
- Compression of solids (abst.), 6, 38, 190: of solids, sulphides formed by (abst.), - - - - - 6, 190
- Concretions, intestinal, of horses, analysis of, - - - - 1, 430
- Condensation of nitric acid, - - - - - 17, 576
- Condensations, on (physical and chemical), - - - - 13, 122
- Condensed milk. See Milk.
- Condenser for low boiling liquids, 19, 398: for extraction apparatus, 20, 965: modified Liebig's (abst.), 5, 97: for water analysis - 16, 871
- Condenser attachment, new, - - - - - 10, 63
- Condensers, use of aluminum for, - - - - - 19, 153
- Conductivity measurements, reliability of dissociation values determined by, - - - - - 20, 517
- Conflagrations, prevention and extinguishing, - - - 17, 137, 251, 361
- Conglutin and vitellin, - - - - - 18, 609
- Congress of Applied Chemistry, Second International, 18, 307, 660, 923: Third International, - - - - 20, 137, 234, 466, 550
- Congress, Chemical Midwinter Fair, at San Francisco, - - - 16, 645
- Congress of Chemists, World's, address of welcome, 15, 301: announcements of committee on, 15, 43, 106, 177, 240: closing address before, 16, 867: proceedings of, - - - - 15, 305
- Congress, National Pure Food and Drug, - - - - 20, (35)
- Congresses, International Chemical (note), - - - - 16, 880
- Conhydrine, on the chemistry of (abst.), - - - - 5, 53
- Constitution of American Chemical Society, - - - 12, 184; 20, (51)
- Copper, alloys of, with cobalt (abst.), 7, 285: analysis of, experiments on, 16, 133: analysis of, method for, 16, 66: analysis of refined, 16, 785: assay of, in the wet way, 17, 346: assay of, by iodide method, 18, 458: commercial, examination of (abst.), 4, 167: bar, rational mode of sampling, 19, 245: delicate test for, 1, 525: determination of arsenic in metallic, 4, 167: determination of sulphur in refined, 17, 814: distribution of precious metals and impurities in, 19, 243: electrolysis of pyrophosphate of (abst.), 12, 171: native, identification and quantitative estimation of arsenic, sulphur, phosphorus, etc., in (abst.), 6, 241: normally present in wheat (abst.), 4, 188: reaction of, with sulphuric acid, 17, 904; 18, 251, 942: reagent for (abst.), - - - - 1, 528
- Copper, reduction, determination of, 19, 305: refining, composition of tank residues in, - - - - 19, 778
- Copper, phosphor-, analysis of, - - - - 19, 396
- Copper ammonium compounds, manufacture of (abst.), 6, 139: ammonium oxyferrocyanide (abst.), 1, 388: arsenate, basic (abst.), 8, 164: oxychloride as a paint (abst.), 6, 291: potassium carbonate solution for determination of sugars (abst.), 12, 226: sulphate, solubility of, in the presence of ammonium sulphate (abst.), 8, 34: sulphide, colloidal (abst.), 9, 110: sulphide, pre-

- cipitated, composition of (abst.), 1, 332: sulphites, isomery of (abst.), - - - - - 4, 141  
 Copper, determination of, P. 2, 140: actual accuracy of, 18, 814: in aluminum, 18, 768: colorimetric, improvements in, 19, 24: as oxide, 2, 146: by titration with thiocyanate (abst.), 1, 323: volumetric method for, - - - - - 4, 35; 19, 940; 20, 610  
 Copper separation of, from antimony, electrolytic, 15, 32, 198: from antimony, by hydrobromic acid gas, 20, 804: from antimony, by hydrochloric acid gas, 18, 1038: from arsenic, by hydrobromic acid gas, 20, 805: from arsenic, by hydrochloric acid gas, 18, 1038: from bismuth, by hydrochloric acid gas, 18, 1036: from bismuth (abst.), 5, 244: from cadmium, electrolytic, 15, 102: from cobalt, electrolytic, 15, 103: from cobalt (abst.), 8, 277: from iron, electrolytic, 15, 103: from manganese (abst.), 8, 277: from mercury, electrolytic, 16, 423: from nickel, electrolytic, 15, 103: as oxalate (abst.), 1, 531: from silver, electrolytic, 16, 420: from tin, electrolytic, 15, 197, 198: from zinc, electrolytic, - - - - - 15, 103  
 Copper and arsenic left on sprayed fruit, - - - - - 16, 71  
 Copper and nitrogen, double iodide of (abst.), - - - - - 6, 34  
 Copper-zinc couple, action of, on nitric oxide (abst.), 5, 233: estimation of chlorates by (abst.), - - - - - 10, 26  
 Corallin, detection of, in wine (abst.), - - - - - 1, 576  
 Corn, examination of Eastern, Western, and Southern, 2, 7: the oil of 20, 948: studies on, at different stages of vegetation (abst.), 5, 120: see also Maize.  
 Corylin, a proteid of the walnut and filbert, - - - - - 18, 617  
 Cotton for manufacture of gun-cotton, inspection of, - - - - - 17, 783  
 Cotton, silk, and wool, absorption of weak reagents by (abst.), - 5, 98  
 Cotton goods, bleaching, etc., of (abst.), 6, 142: printed, microscopic examination of (abst.), - - - - - 5, 125  
 Cotton-seed, analyses of, 6, 216: cake, betain in (abst.), 7, 58: cake and meal, digestibility of (abst.), 8, 60: foods, effect on butter from feeding, 13, 134: melitose in (abst.), 7, 30: proteids of, - 16, 778  
 Cotton-seed oil (abst.), 8, 206: an adulterant of tallow (abst.), 10, 86: detection of, in lard (abst.), 10, 115: distinction of, from olive oil (abst.), 4, 192: test for, in lard (abst.), - - - - - 10, 182  
 Council, minutes of meetings of, 16, (1), (13), (15); 17, (21), (27), (29), (37), (43), (45), (67); 18, (35), (57), (65), (71), (97), (119), (123); 19, (8), (15), (19), (21), (27), (33), (41), (55); 20, (1), (16), (19), (27), (43), (60), (69), (75), (85), (91), (99), (103)  
 Counter for bacteria, a new, - - - - - 20, 507  
 Cow-pea, proteids of, - - - - - 19, 494  
 Cream, proteids of, - - - - - 20, 858  
 Cream of tartar substitutes, their chemistry and analysis, - 16, 333  
 Creatinine group, compounds of the (abst.), - - - - - 4, 273  
 Creatinines, note on stereochemistry of, - - - - - 14, 284  
 Cresol, nitroso-o- (abst.), - - - - - 7, 55

- o*-Cresol, phthalein of (abst.), - - - - - 1, 395  
 Cresols, azo- and disazo- compounds of (abst.), - - - - - 7, 54  
 Creosote oil, estimation of phenol in (abst.), - - - - - 6, 38  
 Critical temperature of liquids (abst.), - - - - - 4, 264  
 Crotonic acid, decomposition of halogen substitution products of, by  
     alkalies (abst.), - - - - - 4, 206  
 Crotonic acid, methyl-, contributions to history of (abst.), - - - 1, 396  
 Crucible, Gooch, use of, as a silver voltameter, 12, 300: improved  
     Gooch, 15, 710: porcelain Gooch, - - - - - 13, 105  
 Crucibles, graphite, manufacture of, 6, 283; 7, 4: porcelain, on num-  
     bering (abst.), - - - - - 6, 99  
 Cryptidine, - - - - - 5, 7, 67  
 Crystals, force function in (abst.), - - - - - 7, 199  
 Crystallization, fractional, 2, 408: from saturated solutions of certain  
     compound salts (abst.), 4, 261: water of, specific volume of,  
     (abst.), - - - - - 2, 350  
 Cubic alum and chrome alum (abst.), - - - - - 2, 370  
*Cucurbitaceae* of Uruguay (abst.), - - - - - 4, 236  
 Cumarone of coal tar (abst.), - - - - - 12, 162  
 Cumene, synthesis of (abst.), - - - - - 2, 95  
 Cumic acid, constitution of (abst.), - - - - - 4, 266  
 Cumic aldehyde, synthesis of thymol from (abst.), 4, 205: nitro-, and  
     its derivatives (abst.), - - - - - 1, 164  
 Cuminic acid, synthesis of (abst.), - - - - - 5, 51  
 Cuminol. See Cumic aldehyde.  
 Cupellation as a lecturer experiment (abst.), 1, 90: spurting in, - 17, 338  
 Cupreine and homoquinine (abst.), - - - - - 7, 247  
 Cupric ammonium oxyferrocyanide (abst.), 1, 388: ammonium cora-  
     pounds, manufacture and use of (abst.), 6, 139: ammonium sul-  
     phate, basic (abst.), 5, 231: compounds, determination of cuprous  
     compounds, in presence of (abst.), 4, 167: salts, reduction of, by  
     sugars (abst.), 10, 189: sulphide, composition of (abst.), - 1, 332  
 Cupro-manganese, note on, - - - - - 1, 43  
 Cuprous chloride, heat of formation of (abst.), 2, 171: compounds,  
     determination of, in presence of cupric (abst.), 4, 167: sulphites,  
     isomery of (abst.), - - - - - 4, 241  
 Curved surfaces, apparatus for delineation of, - - - - - 13, 263  
 Cyanamide (abst.), 1, 496: transformation of urea into (abst.), - 4, 221  
 Cyananiline and some of its derivatives (abst.), - - - - - 7, 207  
 Cyanate, ethyl (abst.), - - - - - 4, 267  
 Cyanates, aromatic, a few reaction of (abst.), 8, 55: ethereal (abst.), 4, 267  
 Cyanethine, note on (abst.), - - - - - 1, 497  
 Cyanic acid, normal, and its derivatives (abst.), - - - - - 4, 176  
 Cyanide, silver, identification of minute quantities of (abst.), - 5, 245  
 Cyanides, manufacture of, 15, 569: and ferrocyanides, manufacture  
     of, from trimethylamine (abst.), - - - - - 6, 199  
 Cyanogen, action of, on picraminic acid (abst.), 4, 264: action of, on

- the toluidines (abst.), 6, 38: direct combination of, with hydrogen and the metals (abst.), 1, 398; 2, 92: and its derivatives, history of manufacture of, 11, 3, 31: determination of, by silver nitrate, 19, 400: heat of formation of (abst.), 2, 171: preparation of, in the wet way (abst.), 7, 172: use of aniline as an absorbent of (abst.), - - - - - 10, 156
- Cyanogen chloride, action of, on potassium-pyrrol (abst.), 5, 64: compounds of the aromatic *o*-diamines (abst.), 7, 245: compounds in soda-lyes, estimation of, 1, 108: hydride, solid (abst.), 1, 402: iodide, vapor-density and melting-point of (abst.), - - - 12, 225
- Cyanurate, ethyl (abst.), - - - - - 4, 267
- Cyanuric acids, two new (abst.), - - - - - 1, 289
- Cyclical law of the elements, - - - - - 20, 927
- Dairy products, accuracy in analysis of, - - - - - 15, 579
- Dambose and inosite, identity of (abst.), - - - - - 9, 111
- Daphnetin (abst.), - - - - - 1, 167
- Daturine, contributions to knowledge of (abst.), - - - - - 2, 370
- Decompositions, produced by action of aluminum chloride (abst.), 4, 170
- Degràs, - - - - - 16, 535
- Dehydrating substances, action of, on acids (abst.), - - - - - 2, 369
- Density of gases, determination of (abst.), 4, 176: of liquids, relation of, to heat of vaporization, 17, 969: vapor, determination of, - 12, 399
- Desoxalic acid, constitution of (abst.), - - - - - 2, 291
- Detonating submerged nitroglycerol compounds, - - - - - P. 1, 2, 2
- Detonation, rate of propagation of, in solid and liquid explosives (abst.), - - - - - 7, 93
- Developer, use of quinolsulphonic acid as, - - - - - 13, 159; 14, 155
- Dextrin and soluble starch, estimation of, in food-stuffs, - - - 19, 191
- Dextrins, transformation of glucoses into (abst.), - - - - - 8, 181
- Dextrose, crystallized, 4, 11: detection of, in cane-sugar, 1, 2: and inverted sugar, determination of, in presence of saccharose (abst.), 1, 344: dextrose. See also Glucose.
- Diacetone, an aromatic (abst.), - - - - - 6, 134
- Diacetyl, tetrabrom-, symmetrical (abst.), - - - - - 12, 160
- Diallyl, oxidation of, - - - - - 1, 272
- Diallylacetic acid, action of hydrobromic acid and bromine on (abst.), 4, 271
- Diallyl-*iso*-propylcarbinol (abst.), - - - - - 2, 177
- Diamidobenzenes, isomeric, action of sulphuric acid on (abst.), 2, 95
- o*-Diamidodiphenetol (abst.), - - - - - 1, 495
- Diamidoanthraquinone, constitution of (abst.), - - - - - 1, 491
- Diamines, aromatic, methods for determining the constitution of (abst.), 7, 175: aromatic, nitroso derivatives of (abst.), 8, 55: aromatic, use of, in dyeing (abst.), 8, 231: behavior of, with nitrous acid (abst.), 6, 162: primary, action of ethyl chloracetate on (abst.), - - - - - 5, 128
- o*-Diamines, action of carbonyl chloride upon (abst.), 12, 228: aromatic, cyanogen compounds of (abst.), - - - - - 7, 245



Diamond, atomic weight of carbon from combustion of (abst.),	4, 237:	
combustion of (abst.),	6, 36: note on (abst.),	12, 472
Diamonds, presence of, in a pegmatite from Hindustan (abst.),	-	6, 105
Diamylbenzene (abst.),	-	1, 486
Diastase, action of, on starch (abst.),	1, 101: action of, on starch and glycogen (abst.),	1, 173, 273: the chemical nature of, 17, 587; 18, 536: effect of antiseptics on the action of, - 10, 91
Diazo compounds, on (abst.),	7, 228: action of alcohol on (abst.),	
7, 148: action of, on $\beta$ -naphthylamine (abst.),	8, 22: new coloring- matters from, etc.,	2, 236: combination of, with thymenesulphonic acid, 3, 112: experiments on (abst.), 8, 51: researches on (abst.), 12, 232
Diazo derivatives of nitrobenzyl cyanide (abst.),	-	5, 96
Diazo salts, preparation of dry (abst.),	-	12, 475
Diazoamido compounds, action of carbonyl chloride on (abst.),	-	4, 175
Diazoanisole chloride, action of, on phenols,	-	5, 32, 55
Diazo- $\beta$ -naphthalene, action of, on phenols,	-	6, 151
Dibenzoylaniline and its isomers (abst.),	-	4, 171
Dibenzoylsuccinate, ethyl (abst.),	-	6, 84
Dibenzoylsuccinic acid, dilactone of (abst.),	6, 84: lactone of (abst.),	6, 84
Dibenzyl, action of chlorine upon (abst.),	-	1, 497
Dibromcapric acid (abst.),	-	1, 292
<i>iso</i> -Dibromcaproic acid, action of water on (abst.),	-	4, 270
Dibromethylene, constitution of (abst.),	-	2, 90
Dicarbonyl group, condensations of compounds containing, with aldehydes and ammonia (abst.),	-	5, 101
Dichloracetate, butyl (abst.),	-	8, 180
Dichloracrylic acid, decomposition by alkalis (abst.),	-	1, 163
Dichloradipic acid, preparation of, from $\alpha$ -dichloropropionic acid (abst.),	8, 35: properties of (abst.),	8, 36
Dichlorazophenol, constitution of (abst.),	-	1, 493
Dichlorhydrin, action of bromine upon (abst.),	-	1, 486
Dichlornaphthalene, conversion of naphthylaminesulphonic acids into (abst.),	10, 42: and chlornaphthol from $\beta$ -naphtholsulphonic acid (abst.),	4, 229
Dichlornaphthoquinone, action of amines on (abst.),	-	4, 265
Dichloropropionic acid, formation of, from glyceric acid (abst.),	-	1, 289
$\alpha$ -Dichloropropionic acid, ethoxyacrylic acid from (abst.),	12, 227: preparation of dichloradipic and pyrocinchonic acids from (abst.),	8, 35
Dichromate of aniline (abst.),	-	9, 173
Dichromates, some (abst.),	-	2, 369
Dicinchonine (abst.),	-	7, 82
Didymium, chemistry of, 19, 799: note on (abst.),	-	4, 240
Diethoxymethylene,	-	1, 523
Diethoxyresorcinol, action of nitrous acid on (abst.),	-	1, 161
Diethyl malonate, preparation of,	-	18, 1105
Diethyleneamines, methylated (abst.),	-	2, 223
Diethylnaphthylamine, action of carbon oxychloride on (abst.),	-	

- 4, 201: action of sulphuric acid on (abst.), 4, 201: preparation of (abst.), - - - - - 4, 200
- Differences allowable in metallurgical analyses, - - - - - 18, 35
- Diffusion of some organic and inorganic compounds (abst.), - - - - - 5, 22
- Digallic acid (abst.), 1, 161: work of Schiff on, - - - - - 20, 42
- Digestibility of insoluble carbohydrates of wheat, - - - - - 19, 309, 315
- Digestion of albuminoids, influence of tartrates and lactates upon, 12, 394: effect of coal-tar colors, on, 18, 1092: gastric (abst.), 4, 234: influence of alum, etc., upon, 16, 587: peptic, influence of antiseptics on, 19, 889: salivary, behavior of antiseptics toward, 14, 4
- Digestive ferments, action of certain bodies on, - - - - - 19, 744
- Digitaline, digitaleine, and digitine, estimation of (abst.), - - - - - 6, 42
- Dihydroxybenzoic acids and iodosalicylic acids (abst.), - - - - - 5, 29, 59
- Dihydroxyfumaric acid, preparation of (abst.), - - - - - 2, 172
- Dihydroxytoluenes (abst.), - - - - - 5, 61
- Diketones, color reaction for (abst.), 8, 58: preparation of a series of (abst.), - - - - - 10, 14
- Dilactones (abst.), - - - - - 4, 271
- Dilatometer, differential, and its use on alums (abst.), - - - - - 7, 77
- Dilution, influence of, on chemical change (abst.), 2, 345: of liquid reagents by formula, - - - - - 19, 586
- Dimethylamine bromoselenate, - - - - - 20, 573
- Dimethylamine, reactions of, with metallic solutions (abst.), - - - - - 2, 133
- Dimethylaniline, action of cenanthaldehyde and cenanthyl chloride on, in the presence of zinc chloride (abst.), - - - - - 9, 7
- Dimethylaniline ferrocyanide, analysis of, - - - - - 17, 929
- Dimethylaniline, *p*-amido-, action of, on aldehyde (abst.), - - - - - 7, 203
- Dimethylanthrane hydride, and diphenylethane, synthesis of (abst.), - - - - - 6, 165, 166
- Dimethylazobenzene as an indicator in alkalimetry (abst.), - - - - - 7, 204
- Dimethyl- and methyl-diacetouamine (abst.), - - - - - 2, 175
- Dimethylenemalonate, ethyl (abst.), - - - - - 6, 84
- Dimethylenemalonic acid (abst.), - - - - - 6, 84
- Dimethylnaphthylamine (abst.), - - - - - 2, 91
- Dimethylphenylphosphine, reaction of, on ethylene bromide (abst.), 4, 206
- Dimethyl-*m*-toluidine, nitroso-, constitution of (abst.), - - - - - 2, 171
- $\beta$ -Dinaphthylamine, derivatives of (abst.), - - - - - 9, 193
- $\beta$ -Dinaphthylamine, dinitro- (abst.), 6, 237: tetranitro (abst.), - - - - - 6, 237
- o*-Dinitro compounds (abst.), - - - - - 4, 269
- Dinitrobenzoic acid (abst.), - - - - - 2, 369
- $\alpha$ -Dinitronaphthalene (abst.), - - - - - 2, 369
- Dinitro- $\alpha$ -naphthol, amine derivatives of, 19, 927: chlorination of, 19, 929: salts of, - - - - - 19, 923
- Dinitrophenol, chlor-, and an aniline derivative of  $\alpha$ -chlor-dinitrophenol, - - - - - P. 2, 111
- Dinitro-*p*-toluidine (abst.), - - - - - 2, 224
- iso*-Diphenic acid, constitution of (abst.), - - - - - 1, 169

- Diphenols (abst.), - - - - - 1, 293
- Diphenyl, action of nitrogen trioxide on, - - - - - 12, 54
- Diphenyl derivatives containing sulphur (abst.), - - - - - 2, 370
- Diphenylacetic acid, synthesis of (abst.), - - - - - 2, 436
- Diphenylamine, action of nitrogen trioxide on, 12, 10: and aniline, application of, in qualitative analysis (abst.), 5, 52: azo derivatives of (abst.), 1, 396: and *p*-ditolylamine, derivatives of (abst.), 5, 24
- Diphenylamine-acrolein, - - - - - 4, 32
- Diphenylarsenic acid, action of, on the animal organism (abst.), 1, 159
- Diphenyldiamidonaphthol (abst.), - - - - - 2, 170
- Diphenylketone oxide, preparation of (abst.), 5, 93, 121: some derivatives of (abst.), - - - - - 5, 100
- Diphenylethane, nitration products of (abst.), 8, 54: synthesis of (abst.), 6, 191: and dimethylantracene hydride, synthesis of (abst.), - - - - - 6, 165, 166
- Diphenylguanidine chloride, action of nitric acid on (abst.), - - - - - 1, 489
- Diphenylmethane, action of bromine on (abst.), - - - - - 2, 366
- Diphenylmethane, brom-, action of ammonia upon (abst.), - - - - - 2, 436
- Diphenylnitrosamine, azo derivatives of (abst.), - - - - - 1, 396
- Di- and triphenylphosphine (abst.), - - - - - 5, 22
- Dipropargyl, heat of combustion of (abst.), - - - - - 4, 229
- $\beta$ -Dipropylacrylic acid from  $\beta$ -dipropylethylenelactic acid (abst.), - - - - - 7, 83
- Dipropylamine, reactions of, with metallic salts (abst.), - - - - - 8, 201
- $\beta$ -Dipropylethylenelactic acid, preparation of  $\beta$ -dipropylacrylic acid from (abst.), - - - - - 7, 83
- Dipyridine methylene iodide, 18, 988: trimethylene dibromide, - - - - - 18, 28
- Diquinoleic base (abst.), - - - - - 10, 190
- Directors, meetings of the board of, 3, 97; 17, (33), (37); 18, (1), (25); 19, (6), (15), (41), (57); 20, (96)
- Disazo- and azo-compounds of cresols (abst.), - - - - - 7, 54
- Disease and drinking water, 9, 44: immunity against, - - - - - 15, 419
- Disease germs, chemical products and physiological effects of, - - - - - 13, 61
- Diseases, virulent, and chicken cholera (abst.), - - - - - 2, 79
- Disinfectants, relative effectiveness of, - - - - - P. 1, 24
- Displacements, reciprocal, between oxygen, sulphur, and the halogens, combined with hydrogen (abst.), - - - - - 1, 385
- Dissociation, on Berthelot's formula for phenomena of (abst.), 6, 75: of chlorine, a disclaimer, 1, 381: of elements at high temperatures (review), - - - - - 1, 313
- Dissociation-values determined by conductivity measurements, the reliability of, - - - - - 20, 517
- Distillation, automatic regulator for (abst.), 1, 584: fractional, apparatus for, 16, 160: fractional, apparatus for, under reduced pressure (abst.), 5, 114: fractional, in a current of steam (abst.), 7, 33, 251: fractional, value of different methods of (abst.), 2, 345: of a heterogeneous liquid (abst.), - - - - - 1, 401

Distillations, method for conducting a number of, 16, 150: regulation of pressure in (abst.), - - - - -	1, 250
Disulphotetraphenylene, - - - - -	13, 270
Disulphoxides, alkyl, synthesis of (abst.), - - - - -	4, 176
Dithionic acid, formation of sulphuric acid during the preparation of (abst.), - - - - -	8, 177
Dithiourethanes, normal (abst.), - - - - -	4, 268
<i>p</i> -Ditolylamine and diphenylamine, derivatives of (abst.), - - - - -	5, 24
Divaleryl, preparation of (abst.), - - - - -	1, 397
Dolomite from York, Pa., - - - - -	15, 543
Dopplerite of Aussee (abst.), - - - - -	5, 63
Drainage, researches on (abst.), - - - - -	10, 12
Dropping flask for standard solutions, - - - - -	16, 156
Dropping glass, new form of (abst.), - - - - -	1, 379
Drying oven, air, 15, 82: for drying in hydrogen, 15, 709: improvement in, - - - - -	19, 349
Drying sensitive organic substances, method of, - - - - -	19, 388
Duboisine (abst.), - - - - -	2, 225
Durene and hexamethylbenzene, chlorination products of (abst.), - - - - -	8, 182
Dyeing and bleaching, on the chemistry of (abst.), 6, 197: of cotton goods, as practised by Lancashire and Yorkshire dyers (abst.), 6, 142: effect of temperature in (abst.), 6, 199: use of aromatic amines and diamines in (abst.), 8, 231: on the use of certain salts of iron and aluminum in (abst.), - - - - -	6, 172
Dyeing properties of anthragallol (abst.), 6, 142: test, accuracy of, - - - - -	17, 468
Dyes, artificial, progress in manufacture and use of, - - - - -	15, 456
Dye-stuff, blue, from pyrrol (abst.), 6, 161: a new (abst.), 1, 180: new, from <i>o</i> -amidophenol (abst.), - - - - -	1, 493
Dye-stuffs, azo (abst.), 4, 173: from coal-tar, effect of, on digestion, 18, 1092: new (abst.), 2, 367: new class of (abst.), 5, 28: from phenol (abst.), 7, 229: resulting from the simultaneous oxidation of <i>p</i> -diamines with monamines (abst.), 6, 289: used in United States, - - - - -	15, 567
Dynamics, chemical, explanation of Gladstone and Tribe's law in (abst.), - - - - -	7, 26
Dynamite, manufacture of, - - - - -	19, 500
Earth metals contained in samarskite, study of (abst.), 4, 222: rare, contributions to chemistry of (abst.), - - - - -	4, 169
Earth-nut oil, sensibility of, to heat when electrified (abst.), - - - - -	10, 173
Ebullioscope, modified form of, 18, 1063: studies on the (abst.), - - - - -	1, 572
Edestin (from barley), 17, 545: (from rye kernel), 17, 437: the most common globulin, 18, 621: properties of, 16, 528: a proteid of the hemp, squash, castor bean, etc., - - - - -	18, 621
Editorial, - - - - -	12, 4
Education of industrial chemists, - - - - -	15, 481, 627
Egg substance, quantitative determination of (abst.), - - - - -	12, 176
Eggs, coloring-matter in yolk of (abst.), - - - - -	12, 165

- Eggertz' carbon test, influence of sulphur on (abst.), - - - 10, 115
- Eikosylene (abst.), - - - - - 1, 164
- Elaidic and oleic acids, oxidation of, with potassium permanganate (abst.), - - - - - 8, 42
- Elaidin reaction (abst.), - - - - - 8, 232
- Electric arc light, action of, on gaseous bodies, and use for demonstrations (abst.), - - - - - 12, 351
- Electrical furnace (abst.), 18, 924: for 110-volt circuit, - - - 20, 769
- Electric heating applied to metallurgy, history of, - - - 18, 287
- Electrical conductivity of dilute salt solutions (abst.), - - - 6, 125
- Electrical laboratory stove, - - - - - 19, 790
- Electricity and camphor motions, connections between, - - P. 1, 2, 66
- Electrode, aluminum as an, - - - - - 20, 302
- Electrolysis of carbon in ammonia (abst.), 8, 178: of carbon compounds (abst.), 8, 19: new results in (abst.), 2, 43: synthesis of organic compounds by (abst.), 4, 239: unusual case of (abst.), 2, 223: use of, in technical chemical processes, - - - 16, 49
- Electrolytes, resistance of, method of determining, - - - 20, 206
- Electrolytic determination of metals, use of pyrophosphate double salts in (abst.), 12, 168: experiments (abst.), 2, 135: reduction of *p*-nitro compounds, 17, 855: separations, 16, 93, 420; 17, 612: separation of metals, notes on, 13, 140: separation of the metals of the second group, 15, 195: stand, a new, 20, 268: stand, a cheap adjustable, - - - - - 18, 558
- Electroplating bath, method of maintaining uniform composition of, 15, 274
- Element, new atmospheric, - - - - - 16, 719
- Elements, cyclical law of, 20, 927: dissociation of, at high temperatures (abst.), 1, 313: early American arrangement of, 17, 947: in water analysis, modes of combination of (abst.), 1, 336: working hypothesis that they are compound bodies (abst.), - - - 1, 113
- Elephant's milk, composition of, - - - - - 3, 55; 4, 157
- Endowment fund, report of committee on, - - - - - 3, 121
- Energy, chemical, - - - - - 15, 421
- Eosin, use of, for coloring tomatoes, - - - - - 15, 191
- Epichlorhydrin (abst.), 2, 93: action of bromine on (abst.), 2, 364: action of hydrocyanic acid upon (abst.), 1, 160: action of sodium on (abst.), 2, 91: constitution of (abst.), - - - - - 2, 91
- Ergot, spectroscopic detection of, in flour (abst.), 1, 340: spectroscopic reactions of (abst.), - - - - - 1, 103
- Errors in volumetric analysis due to changes of temperature, correction of, - - - - - P. 1, 188
- Erythrol, products of reduction of, by formic acid (abst.), - - 6, 133
- Essential oils. See Oils.
- Esters of hydracids, formation of, in the gaseous state (abst.), 1, 172: influence of the isomerism of alcohols and acids in the formation of (abst.), 2, 182: of tribasic formic acid (abst.), - - - 1, 167
- Esters and ethers of hydroxy acids, boiling-points of (abst.), 1, 290; 2, 174

- Ethanediquinolyline (abst.), - - - - - 12, 232
- Ethane, halogen substitution products of (abst.), 1, 246: nomenclature and boiling-points of substitution products containing bromine or bromine and chlorine (abst.), - - - - - 1, 248
- Ethane diphenyl-, products of nitration of (abst.), 8, 54: synthesis of (abst.), - - - - - 6, 191
- Étard's reaction, on (abst.), - - - - - 12, 231
- Ether, luminous incomplete combustion of (abst.), - - - - - 4, 259
- Ethers and esters of hydroxy acids, boiling-points of (abst.), 1, 290; 2, 174
- Ethers of phenylmesitylene carbinol (abst.), - - - - - 8, 53
- Etherification of hydric acids in gaseous state (abst.), 1, 172: of hydroxy-acids (abst.), 4, 205: influence of isomerism in (abst.), 2, 182: rôle of auxiliary acids in (abst.), 1, 386: of the unsaturated monobasic acids (abst.), - - - - - 2, 172
- Etherion, a new gas, - - - - - 20, 899
- Ethoxyacetonitrile, - - - - - P. 2, 124
- Ethoxyacrylic acid from  $\alpha$ -dichloropropionic acid (abst.), - - - - - 12, 227
- Ethyl acetate, chlorinated derivatives of (abst.), 10, 17: acetate, continuous process for preparation of (abst.), 2, 366: acetoacetate, condensation products of aldehydes with (abst.), 5, 101: acetoacetate, condensation product of phenanthraquinone with (abst.), 5, 92: carbonate, heat of combustion of (abst.), 6, 90: carbonate, new reaction of (abst.), 6, 171: chloracetate, action of, on primary diamines (abst.), 5, 128: chlorocarbonate, action of, on benzene, etc. (abst.), 4, 143: cyanate and cyanurate (abst.), 4, 267: glycocholate (abst.), 1, 289: mustard oil, new formation of (abst.), 2, 221: nitrate, reduction of, by ethyl alcohol (abst.), 2, 434: orthoformate, preparation of (abst.), 1, 167: oxide, combination of, with titanium tetrachloride (abst.), 2, 434: phthalate (abst.), 2, 220: phthalylacetoacetate (abst.), 5, 238: silicate, heat of formation of (abst.), 1, 487: sulphate and acid sulphate (abst.), 1, 492: thioxalate (abst.), - - - - - 5, 236
- $\beta$ -Ethylacetosuccinic ester, decomposition of (abst.), - - - - - 5, 100
- Ethylacetamide, halogen derivatives of, - - - - - P. 2, 115
- Ethylamine bromoselenate, - - - - - 20, 573
- Ethylaniline, compounds of, with naphthoquinone (abst.), - - - - - 5, 19
- Ethylbenzene, oxidation of (abst.), 2, 92: synthesis of (abst.), 2, 92; 6, 168
- Ethylborneol and active camphenol (abst.), - - - - - 9, 114
- Ethylidiacetic acid, detection of, in urine (abst.), - - - - - 1, 254
- Ethylsulphonic acid, preparation of (abst.), - - - - - 12, 158
- Ethylene, action of, on benzene, in presence of aluminium chloride (abst.), 1, 390: illuminating power of, when burned with other gases (abst.), 6, 46: liquid, for production of low temperatures (abst.), 4, 238: nomenclature and boiling-points of substitution products containing bromine or bromine and chlorine (abst.), 1, 248: substitution products containing bromine, or chlorine and

- bromine (abst.), 1, 248: union of free hydrogen with (abst.), - 4, 235
- Ethylene bromide, action of dimethylphenylphosphine on (abst.), 4, 206: bromide, action of, on ethyl malonate (abst.), 6, 83: bromide, tetranitro- (abst.), 6, 131: chlorhydrin, action of, on pyridine bases and on quinoline (abst.), 4, 272: chlorobromide and some of its compounds (abst.), 5, 93: chlorosulphocyanate (abst.), 2, 134: cyanide and hydrocyanic acid, behavior of, to hydrochloric acid and alcohol (abst.), 5, 123: iodopicrate (abst.), 2, 224
- Ethylene, dibrom-, constitution of (abst.), 2, 90: tetranitro-, derivatives of (abst.), 6, 131: tetraphenyl-, preparation of (abst.), - 10, 81
- Ethylene series of hydrocarbons, action of oxidizing agents upon (abst.), - - - - - 2, 185
- Ethylidenepropionic acid, behavior with boiling sodium hydroxide solution, - - - - - 17, 1
- $\alpha$ -Ethyl- $\beta$ -methylvalerolactone (abst.), - - - - - 3, 100
- Ethylsulphates of polyhydric alcohols and carbohydrates (abst.), - 2, 288
- Ethylsulphonic acid, new method of preparing (abst.), - 12, 158
- Ethylsulphonic acid,  $\beta$ -chlor- (abst.), - - - - - 2, 134
- $p$ -Ethyltoluene, brom-, oxidation of (abst.), - - - - - 1, 284
- $\alpha$ -Ethylvalerolactone,  $\alpha$ -ethyl- $\beta$ -methylvalerolactone, and on a decomposition of  $\beta$ -ethylacetosuccinic ester (abst.), - - - - - 5, 100
- Ethyl- and methylacetylcyanate of ethyl (abst.), - - - - - 6, 164
- Eudiometer, slight modification of Wilkinson's - - - - - 3, 36
- Eugenol, derivatives of, - - - - - 19, 825
- Eukairite from Rioja, Argentine Republic (abst.), - - - - - 12, 224
- Eutexia (abst.), - - - - - 7, 113
- Evaporation of ammoniacal solutions, apparatus for (abst.), 9, 220: automatic regulator for (abst.), 1, 584: of liquids, method of accelerating (abst.), 1, 90: and plant transpiration, 20, 469: *in vacuo* (abst.), - - - - - 5, 235
- Evigtokite (abst.), - - - - - 5, 97
- Excelsin, a globulin from the Brazil nut, - - - - - 18, 621
- Exchanges received by the library, 1892, - - - - - 14, 400
- Excursions at Cleveland, - - - - - 18, (46)
- Expedition, Norwegian North Sea, results of (abst.), - 1, 496; 2, 289
- Experiments. See Lecture experiments.
- Expert testimony, - - - - - 16, 273
- Explosion pipette, modification of Hinman's, - - - - - 17, 771
- Explosion of platinum retort for concentrating sulphuric acid (abst.), 2, 130
- Explosions, gaseous, incompleteness of combustion in (abst.), - 10, 179
- Explosive gelatine, spontaneous decomposition of, - - - - - 6, 13
- Explosives, determinations of the firing points of various, 12, 57: determination of the strength of various, 12, 256: gelatine, 15, 552: manufacture of (abst.), 10, 116: observations on (abst.), 1, 401: relative sensitiveness of, 15, 10: researches upon (abst.), 1, 399: solid and liquid, rate of propagation of detonation in (abst.), - 7, 93
- Explosiveness of petroleum oil, - - - - - P, 1, 115

- Extraction apparatus, 18, 744; (abst.), 1, 586; 4, 250; 10, 69: automatic, 15, 270: Graftian's (abst.), 10, 162: improved form of, 15, 123: Knorr's, modified form of, 16, 868: mechanical arrangement of, 19, 735: Soxhlet's, modified form of, - - - 9, 182
- Factors, analytical, table of, - - - - - 18, 903
- Fahlberg's saccharin, detection of (abst.), 9, 34: nature of (abst.), 9, 201
- Fairfieldite, description of (abst.), - - - - - 1, 392
- Fairy rings, contribution to the chemistry of (abst.), - - - 5, 102
- Faraday's law (abst.), - - - - - 6, 156
- Faraday's law and the law discovered by Bouty (abst.), - - - 6, 126
- Fat, barley, composition of (abst.), 8, 274: bicuhyba (abst.); 8, 42: butter (abst.), 12, 118: butter, and its substitutes, examination of, 8, 155: and casein, determination of, in feces, 19, 877; 20, 101: and casein, determination of, in infant feces, 20, 765: in cochineal (abst.), 8, 66: determination of, in milk, 10, 32; 15, 579: determination of, in milk (abst.), 8, 61: determination of, in milk, optical (abst.), 1, 570: determination of, in milk, comparison of Wanklyn and Adams' methods for, 12, 488: determination of, in oil cake (abst.), 10, 157: determination of, in palm nut meal (abst.), 8, 28: formation of, from carbohydrates in carnivora (abst.), 8, 86: and glycerol, influence of, on secretion of uric acid in man (abst.), 8, 185: and oil, detection of hydrocarbons in (abst.), 8, 86: of porpoise milk (abst.), 8, 184: specific gravity of (abst.), - - - - - 10, 157
- Fats, analysis of, comparative results in, 11, 144: analysis, of, new method for, 16, 275: contained in tuberculosis bacilli, 18, 449: determination of, P. 2, 84: determination of glycerol in (abst.), 4, 239: determination of resin in (abst.), 4, 192: determination of stearic acid in, 19, 32: drying of (abst.), 8, 279: examination of (abst.), 8, 83: iodine figure of, Gantter's process for determining, 16, 372: melting-point of (abst.), 8, 86: testing for a yellow azo color in, 20, 110, 889: unsaponifiable, examination of oils containing (abst.), - - - - - 8, 39
- Fats and oils, analysis of (abst.), 10, 194: determination of solid fat in, 18, 259: formation of basic salts in the saponification of (abst.), 8, 41: methods of testing, 15, 153: Muter's method for analysis of, 15, 110: quantitative estimation of (abst.), - - - 6, 245
- Fats and resins, Koettstorfer figure of dark-colored, - - - 16, 408
- Fats and soaps, determination of rosin in (abst.), - - - 8, 205
- Fatty acids. See Acids, fatty.
- Fatty bodies, influence of, on the putrefaction of albumin (abst.), 8, 230: method for determining fusion and solidification points of (abst.), 8, 65: studies on (abst.), - - - 7, 288
- Fatty compounds, solubility of mercuric iodide in (abst.), - - 8, 40
- Fatty materials in candles, determination of melting-point of, - 16, 825
- Fatty matter in an *Irvingia* from Cochin China (abst.), - - 8, 110
- Fatty matters, examination of (abst.), 8, 83: separation of, from



- strychnine and morphine (abst.), - - - 9, 15
- Fatty oils, detection of, in mineral oils (abst.), 8, 39: detection of mineral oil in (abst.), 8, 38: detection of, when mixed with mineral oils (abst.), 7, 226: on the solidification of (abst.), 6, 198: solubility of iodine in (abst.), - - - 7, 202
- Fatty series. See Aliphatic series.
- Feces, determination of fat and casein in, - - 19, 877; 20, 101; 20, 765
- Feldspars, action of sodium hydroxide and carbonate on (abst.), 4, 199
- Ferment, alcoholic, soluble, non-existence of (abst.), - - 1, 403
- Ferments, digestive, action of certain bodies on, - - - 19, 744
- Fermentation, action of hydrogen dioxide on (abst.), 4, 239: of beet-root juice (abst.), 2, 91: evolution of free nitrogen in (abst.), 4, 267: of glucose syrups, 16, 808: succinic (abst.), 1, 273: sulphydric (abst.), - - - 1, 489
- Ferrates, the, - - - 17, 760
- Ferric alum, speed of reduction of, by sugar, 19, 683: arsenate, crystallized, artificial production of (abst.), 2, 132: chloride, speed of reduction of, by stannous chloride, 16, 314: ethylate and colloidal ferric hydroxide (abst.), 6, 92: hydroxide as a precipitant for suspended clay, 13, 100: hydroxide, notes on (abst.), 5, 99: oxide, action of, on potassium chlorate (abst.), 4, 142: oxide, reduction of, with pulverized zinc (abst.), 1, 96: oxide, separation of, from alumina (abst.), 7, 124: salts, reaction between, and oxalic acid (abst.), 8, 198: salts, zinc, magnesium, and iron as reducing agents with (abst.), 4, 223: sulphate, basic, molecular weight of (abst.), 5, 100: sulphate, an earthy, from Arkansas, 4, 61
- Ferricyanides, heat of formation of some (abst.), - - - 4, 233
- Ferrocyanides, cobalt nitrate as an indicator for, 17, 474: and cyanides, manufacture of, from trimethylamine (abst.), 6, 199: new indicator for, 17, 473: manufacture of, 15, 569: metallic, special law applicable to (abst.), - - - 1, 388
- Ferrocyanides, barium and calcium, use of organic bases in preparation of, 17, 927: zinc and manganese, - 18, 1100: 19, 542. 547
- Ferro-silicon and silico-spiegel, determination of silicon in, - 19, 138
- Ferro-tungsten, experiments on a, - - - 16, 297
- Ferrous oxide, determination of; in silicates (abst.), 1, 85: sulphate, application of, in agriculture and value as plant food (abst.), 7, 54: sulphate, value of, as a manure (abst.), - - - 6, 77
- Fertilizer, value of ferrous sulphate as a, - - - 7, 54
- Fertilizer analysis, legislation on, 10, 2: recent methods in, - 15, 217
- Fertilizer industry, development and extent of, - - - 15, 321
- Fertilizers, determination of nitrogen in (abst.), 9, 13: determination of phosphoric acid in (abst.), 6, 241: produced in United States, 15, 564: quick method for estimating phosphoric acid in (abst.), 7, 210
- Fever, typhoid, at Mt. Holly, N. J. in 1887, - - - 9, 146
- Fiber, crude, determination of, in cereals, 19, (39): crude, determination of, in food-stuffs, 19, 196: crude, in sugar-cane, estimation of,

- 16, 303 : determination of, in bagasse, sources of error in, 18, 462 :  
of wheat, characteristics of, - - - - - 19, 294
- Fibrin, decomposition of hydrogen dioxide by (abst.), - - - - - 5, 120
- Filbert, proteids of, - - - - - 18, 618
- Fillamite, description of (abst.), - - - - - 1, 392
- Filter, efficacy of Breyer's "micro-membrane," - - - - - 8, 192
- Filter-paper, matter soluble in ether in (abst.), 8, 279 : quality of  
various makes of (abst.), 1, 376 : Swedish, variations in quality of  
(abst.), 1, 376 : toughened (abst.), - - - - - 7, 211
- Filters of asbestos, 4, 248 : 10, 69 : method of folding (abst.), 9, 175 :  
porous porcelain, efficiency of, 9, 22 : two new, - - - - - 7, 104
- Filter-disk, an improved, - - - - - 16, 58
- Filtering apparatus with automatic feed, 19, 284 : new, - - - - - 3, 125
- Filtering bulb of platinum, - - - - - 8, 17
- Filtering siphon, automatic, - - - - - 19, 817
- Filtration of potable water (abst.), 6, 140 : rapid (abst.), 6, 49 : use of  
asbestos in (abst.), - - - - - 10, 69
- Fire, chemical methods of preventing and extinguishing, 17, 137, 251, 361
- Fire-damp, method for detection of (abst.), - - - - - 1, 367
- Fish, putrefaction bases from (abst.), - - - - - 7, 175
- Flame, cause of diminishing, in lamps fed with inferior kerosene  
(abst.), - - - - - 6, 29
- Flame reactions of silver, - - - - - P. 1, 2, 33
- Flashing point of kerosene, demonstration of (abst.), - - - - - 5, 53
- Flask, dropping, new form of, 7, 20 : new calibrated weighing, 19, 198 :  
weighing, for use as a burette, - - - - - 4, 6
- Flasks, official methods for graduating, - - - - - 20, 924
- Flavopurpurine, detection of (abst.), 2, 95 : relation of, to anthrapur-  
purine and isopurpurine, - - - - - 1, 184
- Flour, detection of alum in (abst.), 1, 566 : examination of, for  
alumina and silica (abst.), 1, 110 : physical and chemical analysis  
of, 6, 56 : wheat, alumina a natural constituent of (abst.), - - - - - 9, 169
- Flour and bread, analysis of (abst.), - - - - - 1, 566
- Flours, old, presence of alkaloids in (abst.), - - - - - 8, 167
- Fluoranthene, constitution of (abst.), - - - - - 1, 169
- Fluorene, some derivatives of (abst.), - - - - - 5, 99
- Fluorene, *p*-amido-, (abst.), - - - - - 6, 86
- Fluorides as agents for softening hard water, 12, 303 : heat of forma-  
tion of (abst.), 6, 74 : sodium (abst.), 6, 74 : soluble, heat of com-  
bination of (abst.), 6, 74 : use of, in manufacture of alcohol, - 14, 212
- Fluorine, detection and determination of (abst.), 7, 295 : determina-  
tion of, in organic bodies (abst.), 1, 543 : some uranium com-  
pounds of (abst.), 5, 97 : volumetric determination of (abst.),  
- - - - - 1, 113, 539 : 9, 10
- Fluorite from York, Pa., - - - - - 15, 543
- Fodders, determination of potash and phosphoric acid in, - - - - - 19, 320
- Food, canned, occurrence of tin in, - - - - - 13, 200

- Food of the future, the synthetic (presidential address), - - 17, 155
- Foods, cattle, recent progress in analysis of, 16, 174: detection of  
salicylic acid in (abst.), - - - - 8, 278
- Force, chemical, relative intensity of, - - - - 12, 292
- Force function in crystals (abst.), - - - - 7, 199
- Formaldehyde, preparation of (abst.), 2, 221: synthesis of polyhydric  
alcohols by means of, - - - - 15, 704
- Formanilide, nitriles from (abst.), - - - - 8, 74
- Formic acid, oxidation of, by cupric ammonium solution (abst.),  
1, 490: products of the reduction of erythrol by (abst.), 6, 133:  
synthetic preparation of (abst.), 2, 94, 368: tribasic, esters of  
(abst.), - - - - 1, 167
- Formulae for mixing solutions (abst.), 6, 43: structural, of aromatic  
compounds (abst.), - - - - 1, 169
- Fractional crystallization and isomorphous salts, - - - 2, 408
- Fractional distillation, apparatus for, 16, 160: in current of steam  
(abst.), 7, 251: *in vacuo*, apparatus for (abst.), 5, 114: value of  
different methods (abst.), - - - - 2, 345
- Franklinite, artificial production of (abst.), - - - 9, 100
- Freezing-point in thermometers, rise in (abst.), - - - 12, 413
- French chalk, use of, for packing and closing leakages (abst.), - 7, 214
- Friedel-Craft's synthesis of ketones from phenolethers (abst.), - 12, 227
- Fruit culture, contributions to the chemistry of, - - - 1, 423
- Fruit, mineral residues in sprayed, - - - - 16, 71
- Fuchsine, detection of, in wine (abst.), 1, 574, 575, 576, 578; 8, 57:  
detection and determination of, in wines (abst.), 7, 294: spectrum  
of (abst.), 1, 578: see also Rosaniline.
- Fucose from sea weed, an isomer of rhamnose (abst.), - - 12, 476
- Fuel, gaseous (abst.), 6, 26: for heating gas retorts (abst.), - 6, 105
- Fulminate, mercury, chemistry of (abst.), 7, 122: mercury, deriva-  
tives of (abst.), 7, 80: silver, decomposition of, by hydrochloric  
acid (abst.), 6, 90: silver, Liebig's production of, without nitric  
acid (abst.), 6, 46: sodium (abst.), - - - 7, 201
- Fulminates, constitution of (abst.), 6, 45: formation and constitution  
of (abst.), 6, 46: theory of the constitution of (abst.), - 6, 45
- Fulminuric acid (abst.), - - - - 7, 248
- Fulminuric acid, brom- and chlor- (abst.), - - - 7, 248
- Fumaric acid, action of acetyl chloride on (abst.), 4, 221: action  
of acetyl chloride and glacial acetic acid on (abst.), 5, 18: con-  
tributions to the knowledge of (abst.), - - - 1, 236
- Fumaric acid, dihydroxy-, preparation of (abst.), - - - 2, 172
- Fungi, growth of, in absence of oxygen (abst.), - - - 2, 136
- Fungoid growth without oxygen, possibility of (abst.), - - 1, 494
- Fur and wool, origin, structure, composition, etc., (abst.), - 10, 184
- Furfural contained in fermented liquors, quantity of (abst.), 4, 229:  
determination of, 19, 306: in fermented liquids (abst.), 4, 268:  
note on (abst.), - - - - 6, 132

- Furfural-yielding constituents of plants, 17, 286: constituents of wheat, - - - - - 19, 301
- Furfuran derivatives (abst.), - - - - - 9, 214
- Furnace, gas assay (abst.), 6, 244: electric, for the 110-volt circuit, 20, 769: gas, with arrangements for oxidation (abst.), - - - 1, 585
- Fusel oil, alcohols of, 14, 45: Jorissen's reaction for (abst.), 4, 196, 207: limits of, in spirituous liquors (abst.), 9, 17: quantitative determination of, in brandy (abst.), 5, 27, 50: in spirits, index to the literature on the detection of, - - - - - 18, 397
- Fusing point: see Melting-point.
- Fustic analysis, interpretation of results of, - - - - - 17, 518
- Galactin (abst.), - - - - - 4, 231
- Galactose and lactose, examination of (abst.), - - - - - 7, 85
- Galena from Newburyport, Mass., analysis of, - - - - - 4, 214
- Gallic acid, action of phthalic anhydride on (abst.), 4, 244, 296: condensation product of, with cinnamic acid (abst.), 9, 196: test for (abst.), - - - - - 5, 245
- Gallium (abst.), 7, 77: atomic weight of (abst.), 1, 320: crystallized oxychloride of (abst.), 4, 233: and indium, alloys of (abst.), 7, 139: separation of (abst.), 4, 237, 238, 239, 240, 242, 273: separation of, from zinc and iron (abst.), 4, 168: specific heat and heat of fusion of (abst.), - - - - - 1, 279
- Gallon, the United States, - - - - - 9, 186
- Garbage, ignited, analysis of slag from, - - - - - 6, 188
- Gas analysis, apparatus for (abst.), 1, 283, 373: apparatus for rapid, 5, 76: determination of hydrogen sulphide in, 20, 696: determination of methane and hydrogen by explosion in, 17, 986: method of, for use in gas works (abst.), 6, 31: modification of Hinman's explosion pipette for, 17, 771: technical, determination of methane, carbon monoxide, and hydrogen by explosion in, - - - 20, 343
- Gas, apparatus for reducing measured volumes of, to normal conditions (abst.), - - - - - 6, 97
- Gas, coal, estimation of hydrogen sulphide and carbon dioxide in (abst.), 5, 112: influence of temperature of distillation on the composition of (abst.), 6, 105: as a labor-saving agent in trade (abst.), 6, 106: method of obtaining benzene from (abst.), 6, 175: process for desulphurizing (abst.), 9, 223: new residual product from (abst.), - - - - - 6, 24
- Gas generators, - - - 16, 868; 17, 304, 420, 809; 18, 1057; 19, 818
- Gas generators, formation of ammonium thiosulphate in, - - - 8, 47
- Gas, illuminating, determination of benzene in, 16, 697: determination of hydrogen sulphide in, 4, 177: manufacture of, from wood, 2, 449
- Gas-making by Coopers' lime process (abst.), - - - - - 6, 31
- Gas, a new (etherion), - - - - - 20, 899
- Gas, a new, in the atmosphere (argon), - - - - - 16, 719
- Gas-pressure regulator, an efficient, - - - - - 20, 501
- Gas regulator, an improved, 17, 781: a simple form of, - - - 18, 511

Gas retorts, heating of, by gaseous fuel (abst.),	-	-	-	-	-	6, 105
Gases, action of the electric arc light on (abst.),	12, 351 :	apparatus for the rapid analysis of mixtures of,	3, 91 :	in Bessemer ingot, composition of,	2, 146 :	
and analyzing,	19, 733 :	combustible, analysis of (abst.),	1, 372 :	condensation of, as a lecture experiment (abst.),	2, 95 :	
contained in uraninite,	17, 421 :	determination of the density of (abst.),	4, 176 :	drying of (abst.),	7, 295 ; 10, 67 :	
electrolytic method of liquefying (abst.),	10, 78 :	escaping from chemical works, analysis of (abst.),	4, 161 :	evolved during the conversion of grass into hay (abst.),	5, 114 :	
injury to vegetation by (abst.),	6, 198 :	in iron and steel (abst.),	1, 165 :	liquefied, for production of low temperatures (abst.),	4, 238 :	
method for detection of minute quantities of (abst.),	9, 19c :	occluded in cast steel (abst.),	6, 172 :	produced by bacteria,	18, 157 :	
researches on the compressibility of (abst.),	-	-	-	-	-	1, 172
Gaseous explosives, incompleteness of combustion of (abst.),	-	-	-	-	-	10, 179
Gaseous fuel (abst.),	-	-	-	-	-	6, 26
Gasoline vapor, use of, in blast lamp (abst.),	-	-	-	-	-	1, 91
Gastric digestion (abst.),	-	-	-	-	-	4, 234
Gastric juice (abst.),	-	-	-	-	-	4, 242
Gasvolumeter, a new (abst.),	-	-	-	-	-	12, 175
Gay-Lussite in soda liquors (abst.),	4, 73 :	loss of soda by formation of (abst.),	-	-	-	4, 74
Gelatin-dynamite, manufacture of,	-	-	-	-	-	15, 552
Gelignite, manufacture of,	-	-	-	-	-	15, 552
Gems, specific gravity of,	-	-	-	-	-	16, 205
Geranium, oil of, detection of adulterations in (abst.),	-	-	-	-	-	1, 105
Geranium oil, Indian (abst.),	-	-	-	-	-	12, 234
German silver, analysis of (abst.),	-	-	-	-	-	10, 64
Germination in certain soils (abst.),	-	-	-	-	-	7, 25
Germs, disease, chemical products of, etc.,	-	-	-	-	-	13, 61
Germs of microbes, influence of sunlight on (abst.),	-	-	-	-	-	7, 77
Glass, alkaline reaction of, as a source of error in analysis (abst.),	6, 97 :	impervious to gases (abst.),	1, 91 :	manufacture of various kinds of (abst.),	1, 172 :	
scale of fusibility for,	16, 406 :	solubility of, in certain reagents (abst.),	4, 219 :	used in the manufacture of incandescent electric lamps, analyses of,	-	14, 61
Glass tubing, to cut (abst.),	-	-	-	-	-	9, 10
Gladiad (from rye kernel),	17, 439 :	properties of,	-	-	-	16, 525
Globulin, effect of acid on solubility of, in salt solutions,	-	-	-	-	-	19, 482
Glover towers, chemical brick for,	-	-	-	-	-	17, 360
Glucinum, atomic weight of (abst.),	7, 113 :	salts of, purification of,	17, 604 :	separation of, from iron,	-	17, 688
Gluconic acid, action of hydrobromic acid on (abst.),	-	-	-	-	-	6, 162
Glucose, acidity of,	17, 402 :	anhydrous, detection of, in refined cane-sugar,	5, 41 :	ash in,	17, 403 :	
in blood, determination of (abst.),	-	-	-	-	-	

- 1, 350 : in butter, 20, 201 : in cane-sugar, determination of, 1, 2 : commercial, rotary power of, 2, 387 : crystallized, 4, 11 : detection of, in sugar, 2, 111, 428 : determination of, by means of ammoniated Fehling's solution (abst.), 1, 341 : inactive, or neutral sugar (abst.), 2, 364 : new cupric solution for estimation of (abst.), 1, 344 : rotary power of, effect of heating with dilute acids upon, 2, 395 : sweetness of (abst.), 1, 182 : synthesis of (abst.), 12, 157 : use of sulphites in making, - - - - - 17, 281
- Glucose syrup, acidity of, 17, 402 : ash in, 17, 403 : detection of, in sugar-house molasses, 3, 87 : fermentation of, 16, 808 : use of sulphites in making, - - - - - 17, 281
- Glucoses, transformation of, into dextrines (abst.), - - - 8, 181
- Glucoside of kola, 19, 77 : tartaric (abst.), - - - 6, 132
- Glucoside, phenol-, synthesis of (abst.), - - - 2, 42
- Glucoside sugar of Persian berries (abst.), - - - 2, 62
- Glue, with chromates, behavior, of, towards light (abst.), - 1, 493
- Glutaric acid, trimethyl-, and tetramethylsuccinic acid (abst.), - 12, 157
- Gluten (abst.), - - - - - 2, 370
- Glutenin, properties of, - - - - - 16, 526
- Glyceric acid, preparation of (abst.), - - - - - 8, 64
- Glyceric aldehyde, (abst.), - - - - - 9, 101
- Glycerol, action of ammonium salts on (abst.), 8, 273 : action of nitrous anhydride on (abst.), 5, 233 : arsenic in, 17, 883 : decomposition of tartaric acid in the presence of, at a high temperature (abst.), 8, 110 : examination of, 17, 277 : examination of commercial, 11, 125 : and fat, influence of, on the secretion of uric acid in man (abst.), 8, 185 : occurrence of trimethylene glycol in, 17, 890 : oxidation of, in alkaline solution (abst.), 8, 64 : phorone from (abst.), 4, 176 : test for (abst.), - - - 1, 339
- Glycerol, determination of (abst.), 8, 27 ; 10, 196 : in aqueous solutions of (abst.), 4, 196 : in fats (abst.), 4, 239 : in oils (abst.), 8, 102, 104 : by oxidation (abst.), 10, 197 : when produced by saponification of fatty oils (abst.), 8, 204 : in soaps, lyes, and concentrated glycerol (abst.), 10, 182 : in sweet wines (abst.), 4, 191 : in wine (abst.), - - - - - 2, 365
- Glycerolate, sodium (abst.), - - - - - 8, 184
- Glycinin, globulin of the soy bean, - - - - - 20, 423
- Glycocoll, contained in juice of sugar-cane, 19, 881 ; 20, 133 : new method of making (abst.), - - - 1, 390
- Glycogen, action of diastase, saliva, and pancreatic juice on (abst.), - - - - - 1, 173, 273
- Glycol, combination of aldehydes with (abst.), 9, 172 : presence of, in wine (abst.), - - - - - 4, 242
- Glycols and aldehydes, combinations of (abst.), - - - 10, 18
- Glycolchlorhydrin, action of carbonyl chloride on (abst.), - 7, 144
- Glycolic acid, transformation of glyoxal into (abst.), - - 6, 90
- Glycocholic acid, reaction for (abst.), - - - - - 1, 105

Glycollide, - - - - -	P. 2, 118
Glycyrrhizine (abst.), - - - - -	2, 180
Glyoxal-bisulphite of sodium, thermochemical examination of (abst.),	6, 189
Glyoxal, preparation of (abst.), 6, 89 : transformation of, into glycolic acid (abst.), - - - - -	6, 90
Glyoxal acid sodium sulphite (abst.), - - - - -	6, 189
Glyoxalines, some new (abst.), 5, 242 : and oxalines (abst.), - - -	5, 19
Glyoxylic acid, contributions to the history of (abst.), - - -	1, 395
Gneiss of Manhattan Island, analysis of, - - - - -	P. 1, 69
Gold, assay of, by cyanide process, 18, 309 : Cassel-Hinman process for extracting, 18, 451 : in copper materials, actual accuracy of determinations of, 18, 816 : determination of, in alloys (abst.), 1, 99 : loss, of, during scorification assay, 16, 313 : purple colors derived from (abst.), - - - - -	7, 76
Gold-aluminum alloys, - - - - -	16, 485
Gold and platinum, separation of, from antimony, arsenic, and tin (abst.), 8, 278 : qualitative separation of, from antimony, arsenic, and tin (abst.), - - - - -	10, 156
Gold and silver, method of toughening, in the melting crucible, 6, 182, 210	
"Gold from wheat," British patent process, - - - - -	19, (23)
Gooch crucible, improved form of, 15, 710 : use of, as a silver voltmeter, - - - - -	12, 300
Graduated glass vessels and areometers, verification of, - - -	P. 2, 128
Grape vine, chemistry of, - - - - -	P. 2, 35
Graphic methods, application of, in chemical studies, - - -	14, 128
Graphite, determination of, in minerals (abst.), 7, 123 : determination of, in pig iron, 17, 873 : in pig metal, experiments on the determination of, - - - - -	16, 104
Graphite crucibles, - - - - -	6, 283
Grass, gases evolved during conversion of, into hay (abst.), - - -	5, 114
Gravimeter for sugar analysis, - - - - -	16, 677
Grease, analysis of (abst.), 10, 115 : fuller's, detection of mineral oil in (abst.), 8, 38 ; fuller's, and suint, preparation of soap from (abst.), 8, 87 : and oils, improvements in bleaching or purifying (abst.), - - - - -	8, 43
Grinding, fine, observations on, - - - - -	6, 229
Grits, Pennant, composition of (abst.), - - - - -	4, 144
Guanidine thiocyanate, desulphurization of (abst.), - - -	2, 134
Guanidine, diphenyl-, action of nitric acid on chloride of (abst.),	1, 489
Guinochet's isomeric carballylic acid (abst.), - - - - -	12, 166
Gum, wood-, and xylose from straw, etc. (abst.), - - - - -	12, 158
Gum arabic (abst.), - - - - -	4, 174
Gums of the arabin group, researches on (abst.), - - - - -	6, 87
Gums and resins, chemical examination of (abst.), - - -	10, 157
Guncotton, decomposition of, in closed vessels (abst.), 1, 399 : early specimen of, 19, (12) : heat of formation of (abst.), 2, 435 : regeneration of the acid residues from the manufacture of (abst.), 9, 38	

- Gunpowder, composition of modern, 15, 1 : a flashing test for, 6, 7 :  
 preparation of charcoal for the manufacture of (abst.), - 9, 190
- Gymnemic acid (abst.), - - - - - 10, 191
- Gypsum from Owasco, N. Y., composition of, - - - P. 1, 2, 62
- Haematein, new compounds of (abst.), - - - - 4, 260
- Hematosin, action of hydrogen dioxide on (abst.), - - - 4, 240
- Haematoxylin and brasilin (abst.), - - - - 7, 60
- Halides and halo-thiocyanates of lead, study of, - - - 19, 820
- Halogen derivatives of ethyl acetamide, - - - - P. 2, 115
- Halogens, determination of, in mixtures of binary compounds, 18, 688:  
 determination of, by titration with silver nitrate and ammonium  
 sulphocyanate solutions (abst.), 1, 323 : determination of, in vola-  
 tile organic compounds (abst.), 5, 96 : and nitrogen, analysis of  
 organic substances containing (abst.), 1, 337 : organic compounds  
 containing, analysis of (abst.), 1, 254 : and oxygen, relative affini-  
 ties of (abst.), 1, 280 : oxygen, and sulphur, combined with  
 hydrogen, reciprocal displacements of (abst.), 1, 385 : Volhard's  
 method for determination of (abst.), - - - - 1, 535
- Haloid acids, action of gaseous, on nitrates, phosphates arsenates and  
 vanadates, - - - - - 17, 735
- Haloid derivatives of sulphur, relative activity of (abst.), - - 8, 164
- Hardness, scale of, for glass, - - - - - 16, 406
- Hay, gases evolved during the conversion of grass into (abst.), - 5, 114
- Haydenite (abst.), - - - - - 6, 158
- Hazelnut, proteids of, - - - - - 18, 618
- Heat of bromination of oils, determination of, 18, 378 : of combina-  
 tion of carbon monoxide (abst.), 1, 279 : of combination of soluble  
 fluorides (abst.), 6, 74 : compiled data on the action of, on metal-  
 lic salts, 5, 135 : disengaged by compression of solid bodies (abst.),  
 6, 190 : evolved on mixing anhydrous sodium sulphate with water  
 (abst.), 1, 395 : of hydration of salts (abst.), 6, 189 : of transfor-  
 mation of allotropic forms of tellurium (abst.), 10, 10 : of transfor-  
 mation of hydroxybenzoic acids (abst.), 8, 22 : of vaporization,  
 relation of, to density and boiling-point, 17, 969 : waste, attempt  
 to utilize, by Perkin's pipes (abst.), - - - - 6, 106
- Heat of combustion of alcohols and acids of the aliphatic series (abst.),  
 8, 82 : of benzene, dipropargyl and acetylene, constitution of ben-  
 zene (abst.), 4, 229 : of carbon and of organic compounds, method  
 of measuring (abst.), 7, 146 : of cereals and cereal products,  
 20, 304 : of certain amines (abst.), 7, 289 : of fatty acids (abst.),  
 8, 83 : of fatty acids and their derivatives (abst.), 8, 183 : of some  
 ketones and of methyl and ethyl carbonates (abst.), 6, 90 : and  
 refraction, relations of (abst.), 4, 176 : of some organic compounds  
 (abst.), 10, 15 : of sugars and solid hydrocarbons (abst.), - 9, 112
- Heat of formation of ammonia (abst.), 2, 433 : of cuprous chloride  
 (abst.), 2, 171 : of cyanogen (abst.), 2, 171 : of ethyl silicate  
 (abst.), 1, 487 : of fluorides (abst.), 6, 74 : of fluoride, chloride,



- and oxychlorides of antimony (abst.), 6, 157 : of gun-cotton and pyroxylin (abst.), 2, 435 : of hydroferricyanic acid (abst.), 4, 231, 233 : of hydrogen phosphide hydrochloride and hydrobromide (abst.), 2, 89 : of hydrogen silicide (abst.), 1, 487 : of hydrotelluric acid (abst.), 10, 10 : of hydroxybenzoic acids (abst.), 8, 22 : of nitrogen oxides (abst.), 2, 433 : of some oxychlorides and oxybromides of mercury (abst.), 6, 127 : of persulphuric acid (abst.), 2, 363 : of phosphonium chloride and bromide (abst.), - 2, 89
- Heat of neutralization of hydrofluoric acid (abst.), 6, 37 : of hydroxybenzoic acids (abst.), 8, 21 : of polyatomic phenols (abst.), - 7, 119
- Heat of solution of some carbon compounds, 18, 146 : of magnesium sulphate (abst.), 7, 52 : of mannitol, 18, 156 : of potassium and lithium sulphates (abst.), - - - - - 7, 52
- Heat-effect of coals, determination of, - - - - - 17, 843
- Heating, electric, applied to metallurgy, history of, - - - 18, 287
- Heating test tubes, apparatus for, - - - - - 19, 286
- Helicin, synthesis of (abst.), - - - - - 2, 42
- Helium, 17, 421 : atomic weight of, 18, 211 : liquefaction of (note), 20, 466
- Hematites, occurrence of vanadium in, - - - - - P. 1, 84
- Hemicellulose, hydrolysis of, 19, 293 : preparation of, 19, 292 : preparation of osazone of, 19, 293 : estimation of, in food-stuffs, - 19, 193
- Heptane from *Pinus Sabiniana* (abst.), 1, 286 : of *Pinus Sabiniana*, heptylene from, - - - - - 4, 22
- Heptylacetic acid, and some salts of, - - - - - 5, 13
- Heptylene, from heptane of *Pinus Sabiniana*, - - - - - 4, 22
- Heptylene bromide, action of alcoholic potash on (abst.), - - 4, 254
- Heptylmalonic acid, and some salts of, - - - - - 5, 10
- Hesperidine and isohesperidine, sugars of (abst.), - - - 10, 79
- Hexamethylbenzene and durenene, chlorination products of (abst.), 8, 182
- Hexylamine, a new (abst.), - - - - - 12, 155
- Hexyl alcohol, a new (abst.), - - - - - 12, 155
- Hexylenes from tertiary hexyl alcohols, and their polymerization products (abst.), - - - - - 1, 251
- Hides, depilation of (abst.), - - - - - 8, 97
- Hippuric acid, source of, in urine of herbivorous animals (abst.), - - - - - 1, 493 ; 2, 138
- Hofmann medal, - - - - - 6, 114
- Homoquinine and cupreine (abst.), - - - - - 7, 247
- Honey from the aphid or plant louse, 14, 350 : estimation of levulose in, 18, 81, 189 : poisonous, - - - - - 19, (10)
- Hop bitters, precipitation of (abst.), - - - - - 9, 176
- Hop substitutes in beer, detection of (abst.), - - - - - 9, 220
- Hops, bitter principles of (abst.), - - - - - 8, 97
- Hordein, a proteid from barley, - - - - - 17, 562
- Horse bean, proteids of the, - - - - - 20, 393, 410
- Human system, elimination of antimony from, - - - P. 2, 142
- Humates and soil fertility, - - - - - 20, 861

- Humite minerals, examination of (abst.), - - - 7, 226
- Humus, composition of, 19, 738 : in soils, on the Grandeau method for determination of, - - - 16, 210
- Hydracids, decomposition of, by metals (abst.), - - - 1, 384
- Hydrastine, soluble compound of, with monocalcium phosphate, 19, 838
- Hydrates of zinc chloride (abst.), - - - 8, 162
- Hydrazine (abst.), 4, 240 : from aldehyde-ammonia (abst.), 12, 165 : Curtius', 10, 164 : compounds of, with ketones (abst.), - - 5, 239
- Hydrazobenzene and benzidine (abst.), - - - 7, 59
- Hydrazoic acid (abst.), - - - 12, 473
- Hydrindonaphthene (abst.), 6, 87 : derivatives of (abst.), - 6, 160
- Hydriodic acid, preparation of (abst.), - - - 10, 77
- Hydrobromic acid, preparation of pure (abst.), 8, 81 : present methods of preparing, with a process for preparing it from zinc bromide and sulphuric acid (abst.), 6, 32 : gas, separations of metals by means of, - - - 20, 797
- Hydrobromic and nitric acids, conversion of sulphides into sulphates by means of (abst.), - - - 6, 33
- Hydrocarbon, new (benzylmesitylene) (abst.), - - - 5, 121
- Hydrocarbon radicals, bivalent, metallic compounds containing (abst.), 4, 258
- Hydrocarbons of the acetylene group, action of, on mercuric oxide and salts (abst.), 6, 93 : acetylene, silver nitrate as a reagent for (abst.), 10, 87 : action of ammonia on the di- and tri-halogen substitution products of (abst.), 12, 228 : of American petroleum (abst.), 1, 384 : aromatic, color reactions of, with antimony and bismuth trichlorides (abst.), 1, 544 : aromatic, oxidation of substitution products of (abst.), 1, 115, 283 ; 2, 221 : association of, with rock salt in nature (abst.), 10, 75 : chrysene and related, synthesis of (abst.), 12, 160 : decomposing action exercised by aluminum chloride on some (abst.), 7, 142 : of the ethylene series, action of oxidizing agents upon (abst.), 2, 185 : in fat and oil, detection of (abst.), 8, 86 : and higher alcohols obtained from American petroleum (abst.), 6, 95 : and hydrogen, purified, products of burning, in pure air, 6, 17 : illuminating power of (abst.), 7, 213 : recovery of, from coal gas (abst.), 6, 27 : solid, and sugars, heat of combustion of (abst.), 9, 112 : unsaturated, formation of, from addition products of unsaturated acids (abst.), - - - 1, 246
- Hydrocarbostyryle, homologues of, synthesis of (abst.), - - 2, 170
- Hydrocellulose, transformation of, into friable pyroxylin (abst.), - 1, 400
- Hydrochinone. See Quinol.
- Hydrochloric acid, action of, upon amidoazo-compounds (abst.), 7, 86 : action of, on sodium vanadate, 16, 578 : and chlorine, influence of the ammonia soda process on the value of (abst.), 6, 174 : combinations of zinc chloride with (abst.), 8, 163 : detection of free chlorine in (abst.), 12, 73 : solubility of some chlorides in the presence of (abst.), 8, 163 : titration of, for chlorine, P. 2, 149 ; 1, 18 : gas, separations of metals by means of, - - - 18, 1029

- Hydrocinchonidine, behavior and occurrence of (abst.), - - - 4, 267
- Hydrocinnamic acid, formation of, in pancreatic digestion (abst.),  
1, 166: series, aldehydes of (abst.), 12, 231: amido-, note on (abst.), 1, 243
- Hydrocyanic acid, action of, on epichlorhydrin (abst.), 1, 160: action  
of haloid acids on (abst.), 4, 221: combinations of, with hydro-  
chloric and hydrobromic acids (abst.), 5, 67: and ethylene  
cyanide, behavior of, with hydrochloric acid and alcohol (abst.),  
5, 123: formation of, by oxidation of thialdine (abst.), - - - 1, 555
- Hydroferricyanic acid (abst.), 4, 232: heat of formation of (abst.), 4, 231, 233
- Hydroferrocyanic acid (abst.), - - - - - 4, 231
- Hydrofluoric acid, 18, 415: action of, on silica and silicates, 8, 210:  
heat of neutralization of, with alkalies and alkaline earths (abst.),  
6, 37: use of, in determining manganese in iron and ores, 20, 504:  
occurrence of, in hydrogen peroxide, - - - - - 17, 718
- Hydrogen, carbon an impurity in, affecting determinations of atomic  
weight, 12, 276: density of, 16, 188; 18, 198: determination of, by  
explosion, in technical gas analysis, 20, 343: fractional combus-  
tion of, in gaseous mixtures (abst.), 1, 372: free, union of, with  
ethylene (abst.), 4, 235: in gaseous mixtures, determination of, by  
absorption (abst.), 1, 371: inaccuracies in the determination of,  
by combustion, 20, 510: new lines in the spectrum of (abst.),  
2, 226: liquefaction of, 20, 466: (abst.), 6, 157: occlusion of, by  
zinc dust (abst.), 7, 113: new process for producing (abst.), 8, 59:  
source of, occluded by zinc (abst.), - - - - - 7, 286
- Hydrogen and carbon monoxide, relative affinity of oxygen for (abst.),  
1, 164: and hydrocarbons, purified, products of burning in pure  
air, 6, 17: and methane in the atmosphere, 17, 801: and methane,  
determination of, by explosion, - - - - - 17, 986
- Hydrogen arsenide, behavior of, towards potassium hydroxide (abst.),  
- - - - - 12, 353, 477
- Hydrogen dioxide, action of, on coloring-matter of blood, and on  
haematosin (abst.), 4, 240: action of, on fermentation (abst.),  
4, 239: action of, on manganese and lead dioxides (abst.), 2, 51:  
action of, on the oxides of chromium (abst.), 8, 162: action of,  
on the oxides of thallium (abst.), 2, 50: and ammonium nitrite,  
production of, in burning hydrogen and hydrocarbons in air, 6, 17:  
some analytical methods which employ, 18, 918: application of,  
in quantitative analysis, 20, 513: behavior of, towards chlorine  
(abst.), 2, 60: behavior of, towards the galvanic current (abst.),  
2, 181: behavior of, towards potassium iodide (abst.), 1, 250: con-  
stitution of (abst.), 18, 283: decomposition of, by fibrin (abst.),  
5, 120: decomposition of, in presence of alkalies (abst.), 2, 365:  
electrolysis of (abst.), 4, 240: estimation of (abst.), 1, 321: esti-  
mation of titanium by, 13, 210: fluorine as an impurity in, 17, 718:  
manufacture and applications of, 12, 64: oxidation by means of  
(abst.), 9, 192: and ozone (abst.), 2, 34, 59, 147: and ozone, both  
produced by action of air on moist phosphorus, 3, 5: reaction of,

- with potassium permanganate, 11, 94 : as a reagent in analysis (abst.), 1, 335 : use of, in analysis of iron and steel, 15, 115 : use of, for the determination of the metals of the iron family (abst.), 10, 192, 192
- Hydrogen phosphide. See Phosphine.
- Hydrogen silicide, heat of formation of (abst.), - - - 1, 487
- Hydrogen sulphide, action of, on arsenic acid (abst.), 10, 11, 11 : action of, on cupric salts (abst.), 1, 332 : action of, on nickel chloride (abst.), 4, 240 : action of, on potassium tetra- and pentathionate (abst.), 4, 224 : behavior of, towards alkaline solutions of aluminum hydroxide (abst.), 1, 163, 334 : behavior of nitro-compounds towards (abst.), 2, 178 : estimation of, in coal gas (abst.), 4, 177 ; 5, 112 : generation of (abst.), 10, 65 : hydrate of (abst.), 4, 242 : magnesium hydrosulphide as a source of (abst.), 6, 311 : note on, 3, 30 : occurrence and estimation of, in natural gas, 20, 696 : preparation of (abst.), 1, 586 : preparation of, for judiciary chemical investigations (abst.), 1, 293 : preparation of, in toxicological investigations (abst.), 1, 378, 393 : substitute for, 17, 338 : use of, in the dry way (abst.), - - - - - 1, 489, 536
- Hydrogen sulphide generator, - - - - - 16, 48, 63, 868 ; 17, 420
- Hydrolysis of starch by acids, investigation of, - - - 18, 869
- Hydrometers, standardizing of, 9, 156 : official methods for verifying, 20, 923
- Hydronitric acid, on the salts of, - - - - - 20, 225
- Hydroquinidine, behavior and occurrence of (abst.), - - - 4, 267
- Hydroquinone. See Quinol.
- Hydrosorbic and sorbic acids, structural formula of (abst.), - 2, 173
- Hydrotelluric acid, heat of formation of (abst.), - - - 10, 10
- Hydroxyacids, boiling-points of esters and ethers of (abst.), 1, 290 ; 2, 174 : etherification of (abst.), - - - - - 4, 205
- Hydroxyacrylic acid (abst.), - - - - - 2, 226
- Hydroxybenzoic acids, heat of neutralization of (abst.), 8, 21 : heat of formation and transformation of (abst.), - - - 8, 22
- $\beta$ -Hydroxybutyric acid in diabetic urine (abst.), 7, 177 : levorotary, in the blood of a diabetic patient (abst.), - - - - - 9, 113
- Hydroxides, alkaline (abst.), - - - - - 7, 283
- Hydroxylamine (abst.), 5, 232 : action of, upon imido ethers and amidines (abst.), 6, 236 : action of, on nitriles (abst.), 6, 160 : reactions of, contributions to knowledge of (abst.), 5, 126 : volumetric determination of (abst.), - - - - - 1, 346
- Hydroxylamine hydrochloride (abst.), - - - - - 5, 62
- Hydroxymethylanthraquinone (abst.), - - - - - 5, 240
- Hydroxypropylmalonic acid and its lactone (abst.), - - - 4, 270
- $\alpha$ -Hydroxyquinoline (abst.), - - - - - 5, 19
- $p$ -Hydroxysalicylic acid (2,5-dihydroxybenzoic acid) (abst.), - 1, 495
- Hydroxyvalerianic acid from allyldimethylcarbinol (abst.), - 2, 178
- Hyoscyamine (abst.), - - - - - 2, 225
- Hypobromite solution, stability of, and its use for the titration of oils, etc. (abst.), - - - - - 6, 99

- Hypochlorites, action of, on urea (abst.), - - - 1, 101
- Hypochlorous acid, decomposition of solutions of, in sunlight (abst.), 7, 120
- Hyponitric acid, determination of, in nitric and sulphuric acids,  
P. 2, 149: titration of, in nitric and sulphuric acids, - - 1, 18
- Hyponitric anhydride, action of, on organic bodies - - 2, 277, 416
- Hyponitrites (abst.), - - - - 6, 75
- Hyposulphites; hyposulphurous acids. See Thiosulphates; Thiosulphuric acid.
- Hyposulphuric acid, composition and basicity of (abst.), - - 1, 497
- Hypoxanthine, question as to production of, from certain albuminoids (abst.), - - - - 2, 224
- Hypoxanthine and adenine (abst.), - - - - 12, 161
- Ice, artificial, manufacture of, - - - - P. 1, 2, 74
- Ilex cassine*, analysis of the leaves of, - - - - 7, 100
- Illuminating apparatus, - - - - 17, 496
- Illuminating power of ethylene when burned with other gases (abst.),  
6, 46: of hydrocarbons (abst.), 7, 213: of methane (abst.), - 7, 213
- Imides, conversion of nitriles into (abst.), - - - 5, 123
- Imido-ethers, action of phenylhydrazine upon (abst.), 6, 235: and  
amidines, action of hydroxylamine on (abst.), - - - 6, 236
- Inactose or neutral sugar (abst.), - - - - 10, 16
- Index, international, to chemical literature, 15, 574: to literature of  
stereochemistry, - - - - 14, 241
- Indexing chemical literature, report of committee on, 11, 121; 18, 940; 19, 766
- Indicator, new, for acidimetry (abst.), 4, 166: in alkalimetry, di-  
methylazobenzene as (abst.), 7, 204: new, for alkalimetry (abst.),  
4, 166: to detect acid nature of weak acids (abst.), 8, 79: for  
neutrality (abst.), - - - - 5, 245
- Indicators, behavior of the alkaline phosphates towards (abst.), 5, 53:  
a study of, 17, 822: use of litmus, rosolic acid, methyl-orange,  
phenacetolin, and phenolphthalein as (abst.), - - 6, 49, 242
- Indigo, artificial, preparation of, 4, 81: derivatives of, 4, 81: deter-  
mination of, on the fibre (abst.), 9, 16: determination of indigotin  
in, 6, 185: molecular weight of (abst.), 1, 254: natural, printing  
of, on calico (abst.), 6, 104: process for extraction of indigotin  
from, 12, 302: quantitative spectroscopic examination of pure  
(abst.), 6, 97: structure of (abst.), 6, 135: synthesis of, from  
monobromacetanilide (abst.), 12, 163: testing, methods of, 7, 16:  
testing, remarks on the methods of (abst.), - - - 7, 211
- Indigo blue, preparation of, from *o*-nitrobenzaldehyde (abst.), 5, 63:  
colors, examination of (abst.), 9, 120: group, compounds of  
(abst.), - - - - 4, 175; 5, 21
- Indigodicarboxylic acid (abst.), - - - - 8, 51
- Indigotin, commercial determination of, 10, 178: extraction of, from  
indigo (abst.), 12, 302: methods of determining, - - 13, 32
- Indirect analysis, - - - - 17, 466; 18, 182
- Indophenols, on (abst.), - - - - 6, 82
- Indium and gallium, alloys of (abst.), - - - - 7, 139

Indium in tungsten minerals, - - - - -	20, 811
Induline group, researches on (abst.), - - - - -	5, 96
Indulines, on (abst.), - - - - -	6, 81
Industrial chemistry, review of, 4, 72 : review of recent progress in, - - - - -	19, 894
Industrial chemists, education of, - - - - -	15, 627
Ink, writing, action of bleaching agents upon (abst.), - - - - -	9, 224
Inosite (abst.), 9, 103 : and dambose, identity of (abst.), - - - - -	9, 111
Insect powder, active principle of (abst.), - - - - -	1, 390
Intensity, relative, of chemical force, - - - - -	12, 292
International Chemical Congresses, committee of conference on, - - - - -	16, 880
International standards for the analysis of iron and steel, work of committee on, - - - - -	16, 140, 286
Inversion of sugar by salts, - - - - -	18, 120, 693
Iodide coatings and sublimates (abst.), - - - - -	10, 26
Iodide, allyl, preparation of (abst.), - - - - -	9, 100
Iodides, action of heat on, 5, 155 : alkyl, note on, 13, 144 : blowpipe reactions for, P. 2, 110 : decomposition of, under influence of actinism, 2, 270 : influence of light on the decomposition of, 1, 65 : soluble, action of light on, - - - - -	2, 249
Iodimetric studies (abst.), - - - - -	9, 33
Iodimetry, founded upon use of permanent standard solutions (abst.), - - - - -	1, 490
Iodine, action of, on naphthalene, at high temperatures (abst.), 4, 232 : action of, on potassium selenocyanate (abst.), 6, 34 : action of, on silver salts of some acids of aromatic series (abst.), 4, 264 : action of, on stannous chloride, 19, 515 : behavior of, at high temperatures (abst.), 2, 371 : behavior of silver haloid salts towards (abst.), 5, 245 : calculation for making standard solution of, for sulphur determinations, 19, 261 : compounds of metallic hydroxides with, 19, 333 : determination of (abst.), 1, 490 ; 9, 33 ; 10, 27 : determination of, in kelp (abst.), 1, 563 : extraction of, from marine plants (abst.), 2, 434 : molecular weight of, in solution (abst.), 10, 155 : oxidation of, in the process of nitrification (abst.), 7, 287 : recovery of, from organic iodide residues (abst.), 5, 232 : separation of, from chlorine in the dry way (abst.), 7, 32 : solubility of, in fatty oils (abst.), - - - - -	7, 202
Iodine acetate, non-existence of (abst.), 1, 161 : trichloride, specific gravity of (abst.), - - - - -	1, 90
Iodine solution, standard, a correction, 16, 112 : standard, preparation of, 16, 431 : standardizing (abst.), - - - - -	8, 200
Iodine, chlorine, and bromine, determination of, in mixtures, 18, 688 : (abst.), 6, 49 : and separation of (abst.), - - - - -	1, 384
Iodoform, action of quinoline on (abst.), 5, 66 : formation of acetylene from (abst.), 6, 37 : manufacture of (abst.), 10, 189 : preparation of, by electrolysis (abst.), - - - - -	7, 85
Iodoform, methyl- (abst.), - - - - -	10, 114
Iodomercurates of atropine, - - - - -	20, 331
Iodostannous acid, - - - - -	19, 851

- Iretol, 16, 847 : properties and reactions of, - - - 16, 849
- Iridin, the glucoside of iris root, 15, 351, 400 ; 16, 847 : constitution of, 16, 856
- Iridium, atomic weight of (abst.), 1, 320 : electro-deposition of, - 15, 274
- Irigenin from iris root, 15, 353 : constitution of, 16, 856 : derivatives of, 15, 400
- Iron, action of hydrogen peroxide on (abst.), 10, 193 : alloy of, with tungsten, 19, 110 : amalgamation of, P. 1, 49 : behavior of carbon toward, at high temperatures (abst.), 8, 72 : carbon in the gases evolved by solution of (abst.), 10, 25 : cast, influence of silicon on the heat of solution of, 20, 690 : chrome, analysis of (abst.), 12, 117 : detection of, by means of salicylic acid (abst.), 1, 335 : electrolysis of pyrophosphate of (abst.), 12, 170 : gases enclosed in (abst.), 1, 165 : influence of silicon on the properties of (abst.), 10, 159 : mixture for separating carbon from (abst.), 10, 156 : oxidized, from an old condenser, analysis of (abst.), 4, 219 : pig, standard samples of (note), 20, 988 : rail, analysis of an old, 19, 9 : reduction of, by hydrogen (abst.), 1, 401 : reduction of, by zinc dust (abst.), 1, 96 : some peculiar forms of, - - - 19, 108
- Iron amalgam (abst.), 1, 276 : phosphide and phosphate, analytical properties of, 16, 477 : salts useful in dyeing (abst.), 6, 172 : silicides, - - - 17, 923
- Iron analysis, determination of carbon, in iron, 18, 1087 : (abst.), 10, 155 : in cast iron, 5, 56 : (abst.), 1, 88 ; 6, 193 : in iron and steel, 15, 213, 450 : (abst.), 4, 165 ; 12, 352 : colorimetric (abst.), 1, 371 : gas-volumetric (abst.), 10, 68 : determination of combined carbon, in iron and steel, P. 2, 72 : determination of chromium, in iron and steel (abst.), 10, 66 : determination of manganese in iron alloys (abst.), 1, 83 : in cast iron and spiegel (abst.), 6, 242 : determination of phosphorus, in iron, P. 1, 167 ; P. 1, 2, 58 ; 18, 955 : in iron and steel (abst.), 1, 104 ; 9, 8 : in iron and its ores (abst.), 6, 193 : determination of silicon, in iron and steel (abst.), 1, 104, 285, 371, 562 ; 4, 165 : determination of sulphur, in iron, 18, 1079 : in pig iron, 19, 114 : in iron and steel (abst.), - 1, 560 ; 4, 165
- Iron, determination of, in aluminum, 18, 768 : electrolytic, 18, 654 : in ores, Zimmermann-Reinhardt method for, 17, 405 : in organic mixtures (abst.), 1, 347 : by permanganate in presence of hydrochloric acid (abst.), 6, 312 : in phosphates, 17, 260 : in phosphate rock, by means of ammonium acetate, 18, 717 : in phosphate rock, new method for, 18, 271 : volumetric, by means of hydrogen dioxide, 18, 918 : volumetric, modification of permanganate method for, 19, 575 : volumetric, in ores, 17, 878 : volumetric, by means of stannous chloride, 15, 396 : volumetric, by various methods, errors in (abst.), - - - 6, 242
- Iron group, qualitative separation of metals of - - - 17, 537
- Iron manufacture, German economy in, - - - 15, 284
- Iron ores, determination of phosphorus in (abst.), 6, 193 : determination of insoluble phosphorus in, 19, 614 : determination of titanium in (abst.), 4, 165 : error in analysis of, due to presence of

- chromium (abst.), 4, 166: method for complete analysis of, 19, 144: occurrence of vanadium in, P. 1, 84: titaniferous, analysis of (abst.), - - - - - 4, 164
- Iron pyrites, synthesis of (abst.), - - - - - 12, 155
- Iron, separation of, from aluminum, 17, 931: (abst.), 7, 124: from arsenic, by hydrobromic acid gas, 20, 809: from arsenic, by hydrochloric acid gas, 18, 1040: from beryllium, 17, 688: from cobalt (abst.), 1, 529: from gallium (abst.), 4, 168: from lanthanum, 20, 846: from manganese (abst.), 1, 325, 529, 533; 8, 277; 9, 10: from nickel (abst.), 1, 529; 8, 277: from titanium, 16, 427; 20, 513: from uranium, 20, 514: from zinc (abst.), 1, 529; 8, 277; 9, 9: from zirconium and allied metals, - - - - - 20, 846
- Iron and steel, committee on international standards for the analysis of, 15, 448; 16, 140, 286: thermochemical study of, 19, 754; 20, 78: standard methods for analysis of, - - - - - 15, 501
- Iron and steel, present possibilities in the analysis of (presidential address), - - - - - 19, 93
- Iron, zinc, and magnesium, as reducing agents with ferric salts (abst.), - - - - - 4, 223
- Irvingia from Cochin China, and the fatty matter contained (abst.), 8, 110
- Isatin (abst.), 7, 57: characteristic reaction for (abst.), 1, 543: constitution of (abst.), - - - - - 7, 173
- Isatoic acid (abst.), - - - - - 7, 174
- Isatoic acid, *p*-methyl-, and its derivatives (abst.), - - - - - 7, 144
- Isocyanide, presence of, in commercial benzene (abst.), - - - - - 7, 29
- Isodulcite (abst.), - - - - - 9, 111
- Isomeric compounds of the aromatic series, heat of neutralization of (abst.), - - - - - 8, 21
- Isomerism of alcohols and acids, influence of, in the formation of esters (abst.), - - - - - 2, 182
- Isonitroso. See Nitroso.
- Isopurpurine, detection of (abst.), 2, 95: relation of, to anthrapurpurine and flavopurpurine, - - - - - 1, 184
- Itaconic acid, new acid isomeric with (abst.), - - - - - 5, 124
- Jervine, chemistry of (abst.), 1, 553: *pseudo*-Jervine, chemistry of (abst.), - - - - - 1, 554
- Journals, chemical, abbreviations of titles of, - - - - - 10, 152
- Kaolins, American, composition of, - - - - - 18, 909
- Kekulé anniversary, - - - - - 12, 80
- Kent chemical laboratory, opening of, - - - - - 16, 213
- Kerosene oil, P. 1, 71: cause of diminishing flame in lamps fed with inferior (abst.), 6, 29: determination of flashing point of (abst.), 5, 53, 245
- Ketone, tolylmethyl- (abst.), - - - - - 4, 206
- Ketones, action of heat on (abst.), 8, 200: action of nitric acid on (abst.), 4, 208: compounds of hydrazines with (abst.), 5, 239: Friedel-Craft's synthesis of, from phenol ethers (abst.), 12, 227:



- heat of combustion of some (abst.), 6, 90: nitrogenized acids derived from (abst.), - - - - - 4, 208
- Kidney bean, proteids of, - - - - - 16, 633, 703, 757
- Kieselguhr, technical applications of (abst.), - - - - - 6, 140
- Kjeldahl method for determination of nitrogen (abst.), 7, 179; 8, 81; 10, 45: behavior of nitrates in (abst.), 7, 290: digestion furnace for (abst.), 7, 291: for compounds of the aromatic series, 7, 108: error in, 13, 212: modification of (abst.), 7, 291; 8, 81; 11, 54: note on Warrington's modification of (abst.), - - - - - 7, 291
- Knorr's extraction apparatus, modification of, - - - - - 16, 868
- Kobellite, new variety of, - - - - - 7, 194
- Koettstorfer figure, method of determining, for dark-colored substances, - - - - - 16, 408
- Kola, caffeine compound in, 19, 63; 20, 34: methods of assay, discussion of, 20, 74: nuts, analysis of (abst.), - - - - - 4, 234
- Kolatannin, 20, 43: derivatives of, - - - - - 20, 48
- Krakatoa, analysis of ash from eruption of (abst.), - - - - - 6, 127
- Laboratory devices, - - - - - 16, 869
- Lactates (abst.), 8, 275: influence of, on the digestion of albuminoids, 12, 394
- Lactic acid, detection and determination of (abst.), 9, 16: preparation of (abst.), - - - - - 5, 20
- Lactic acid, chlor-, formation of, from glyceric acid (abst.), - - - - - 1, 289
- Lactometer tests, - - - - - 13, 93
- Lactometer, utility and reliability of, - - - - - 10, 122
- Lactone of hydroxypropylmalonic acid (abst.), 4, 270: from levulinic acid and formaldehyde, 15, 708: from pyrotartaric acid and formaldehyde, - - - - - 15, 707
- Lactone,  $\alpha$ -ethylvalero-, etc. (abst.), - - - - - 5, 100
- Lactones, on the boiling-points of (abst.), 4, 271: formation of (abst.), 4, 271
- Lactose. See Milk sugar.
- Lactucone (abst.), - - - - - 1, 158
- Lamp, convenient, for generating formaldehyde gas and acetic aldehyde, 19, (11): gasoline, improvement on, 17, 337: Lilienfein's, for low boiling petroleum (abst.), 6, 106: for monochromatic flame, - - - - - 15, 121
- Lamp and candle for blowpipe, - - - - - P. 2, 78
- Lamps, cause of diminishing flame of (abst.), - - - - - 6, 29
- Lanolin (abst.), - - - - - 8, 109
- Lanthanum, separation of, from iron, - - - - - 20, 846
- Lanthanum molybdate, composition of, 17, 536: tungstate, composition and solubility of, - - - - - 17, 533
- Lard, analysis of, phosphomolybdic acid applied to, 17, 33: calorimetric detection of adulterations in, 18, 174: detection of cotton-seed oil in (abst.), 10, 115: detection of foreign fats in, 19, 796: detection of rosin oil or paraffin oil in (abst.), 4, 192: examination of, for impurities, 17, 723: microscopic detection of beef fat in, 18, 189: test for cotton-seed oil and beef stearin in (abst.), - - - - - 10, 182

- Lards, compound, determination of solid fats in, - - - 19, 51
- Larderello, boric acid works, at, - - - - 16, 538
- Lauth's violet and methylene blue, spectroscopic examination of, 6, 304
- Lavoisier memorial, - - - - - 19, 170
- Law, Faraday's (abst.), 6, 156: Faraday's and Bouty's (abst.), 6, 126:  
the perissad, 12, 426: of volumes, additions to the (abst.), - 1, 168
- Lead, action of aminonium hydroxide on the haloid salts of, 6, 218:  
action of petroleum on (abst.), 10, 92: and its alloys, action of  
cold sulphuric acid on, 5, 219: and its alloys, action of sulphuric  
acid at 100° on, 5, 224: alloys of, with tin, blowpipe reactions of,  
P. 2, 108: alloys of, with tin, commercial valuation of, 16, 541:  
alloys of, with tin, specific heat of (abst.), 8, 197: alloys of, with  
antimony, arsenic and tin, 17, 869: alloys of, with antimony, com-  
mercial valuation of, 16, 541: analysis of aragonite containing,  
P. 2, 14: assay of, in the wet way (abst.), 7, 62: bismuth in, in  
the manufacture of white lead, P. 1, 70: cause of discrepancies in  
the estimation of silver in, P. 1, 67: detection of minute traces of,  
by colorimetric method (abst.), 1, 87: electrolysis of pyrophos-  
phate of (abst.), 12, 172: metallic, detection of silver in (abst.),  
4, 168: spongy, reducing action of (abst.), - - - 5, 233
- Lead acetate, peculiar reaction with, 4, 213: chromate, preparation of  
crystallized (abst.), 9, 110: chromate, preparation of crystallized  
chromic acid from (abst.), 9, 222: compounds, aromatic (abst.),  
10, 39: dioxide, action of, on haloid salts in the presence of acetic  
acid (abst.), 5, 23: dioxide, action of hydrogen dioxide on (abst.),  
2, 51: dioxide, preparation of, (abst.), 5, 51: halides and halo-  
thiocyanates, on, 19, 820: iodide, on (abst.), 5, 120: oxide, action  
of potassium hydroxide on (abst.), 4, 237: salts, decomposition of,  
by alkalis (abst.), 4, 237: sulphate, crystallized, see Anglesite:  
sulphiodide, 17, 511: tetrachloride, derivatives of, - - - 20, 815
- Lead, determination of, in alloys, 20, 508: as iodate (abst.), 1, 535: in  
lead ores, 19, 374: technical, 15, 548: volumetric, - - -  
- - - - - 4, 35; 17, 901; 18, 737; 19, 389
- Lead pipe, action of waters on, P. 1, 66; 13, 176: (abst.), -  
- - - - 2, 432; 9, 221; 10, 71
- Lead poisoning by carbonated beverages, note on, - - - 11, 99
- Lead, separation of, from antimony, by hydrobromic acid gas, 20, 801:  
from bismuth, 18, 1055: from bismuth, by hydrobromic acid gas,  
20, 802: from bismuth, by hydrochloric acid gas, 18, 1034: from  
mercury, electrolytic, 15, 101: from silver, electrolytic, - 15, 102
- Leaden chamber process, mixing of gases in (abst.), - - - 4, 73
- Leather refuse, the value of (as fertilizer), - - - 18, 565
- Lecithins of sugar-cane, - - - - - 20, 113
- Lecture experiment, action of water on bismuth iodide (abst.), 4, 142:  
the condensation of gases (abst.), - - - - 2, 95
- Lecture experiments, 12, 48: (abst.), - - - - 4, 205, 227

- Legumelin, a proteid of most leguminous seeds, 20, 354, 415: properties of, - - - - - 20, 415
- Legumin, properties of, 20, 410: and other proteids of the pea and the vetch, - - - - - 18, 583
- Leguminous plants, occurrence of citric acid in the seeds of (abst.), 7, 30
- Lehigh Valley Section, meetings of, - - - - - 17, (26), (44), (63); 18, (32); 19, (31); 20, (101)
- Lemon juice, citric acid in (abst.), - - - - - 10, 195
- Lemon oil (abst.), - - - - - 7, 247
- Lentil, proteids of the, - - - - - 20, 362, 410
- Le Sueur process for the electrolytic production of sodium hydroxide and chlorine, - - - - - 20, 868
- Leucocythemia, abnormal constituents of the blood due to, - P. 1, 2, 29
- Leucomaines and ptomaines (abst.), - - - - - 9, 114
- Leucosin (from barley), 17, 541: (from malt), 18, 547: (from rye kernel), 17, 432: properties of, - - - - - 16, 528
- Levulose, estimation of, in honey, 18, 81, 189: pure, preparation of (abst.), 2, 133: synthesis of (abst.), - - - - - 12, 165
- Library, additions to, - 1, 39, 129, 311; 2, 2; 6, 4, 112, 147, 181, 280
- Library, catalogue of books of, - - - - - P. 2, 155
- Licari kanali*, essential oil of (abst.), - - - - - 4, 233
- Light, action of, on soluble iodides, 2, 249: influence of, on chemical processes (abst.), 1, 93: influence of, on decomposition of iodides, 1, 65
- Lignification, on the chemistry of (abst.), - - - - - 5, 91
- Lignone chloride from wheat fiber, - - - - - 19, 296
- Lime, determination of, by photometric method, - - - - - 18, 665
- Lime juice, determination of nitric acid in (abst.), - - - - - 1, 367
- Lime mud, conversion of, into cement (abst.), - - - - - 10, 91
- Lime, pyrolignite of. See Calcium acetate, crude.
- Lime, quick-, determination of calcium oxide in, 16, 721: technical valuation of (abst.), - - - - - 1, 559
- Linoleic acid (abst.), - - - - - 8, 185, 230
- Linseed oil, adulteration of (abst.), - - - - - 8, 28
- Liquefaction of gases, electrolytic method of (abst.), - - - - - 10, 78
- Liquids, determination of specific gravity of (abst.), 2, 171: some thoughts about, - - - - - 18, 724
- Liquor, Chinese, analysis of, - - - - - 7, 243
- Liquors, alcoholic, examination of (abst.), 12, 503: spirituous, limits of fused oil in (abst.), - - - - - 9, 17
- Liskeardite (abst.), - - - - - 5, 97
- Lithium, determination of, in mineral waters, 12, 214: errors in determining, as phosphate (abst.), 1, 106, 335: separation of, as fluoride (abst.), - - - - - 10, 193
- Lithium bromoselenate, 20, 570: chloride, compounds of, with alcohols (abst.), 2, 135: picrate (abst.), 1, 286: salts, volatility of, 19, 156: sulphate, heat of solution of (abst.), 7, 52: trinitride, - 20, 226
- Lithographic stones, American, - - - - - 14, 376

- Litmus, note on, - - - - - P. 1, 79  
 Lophine, constitution of (abst.), - - - - - 4, 225; 5, 91  
 Lubricant for glass stop-cocks, 20, 678: preparation of (abst.), 8, 109:  
     for wire drawing (abst.), - - - - - 8, 275  
 Lubricating oils, analysis of, - - - - - 15, 265  
 Lupanine from the seeds of *Lupus angustifolius* (abst.), - - - 7, 247  
 Lupin seeds, proteids of, - - - - - 18, 622; 19, 454  
 Lupinin, action of sodium on (abst.), 5, 17: anhydro- (abst.), - 5, 17  
*Lupus angustifolius*, lupanine from the seeds of (abst.), - - - 7, 247  
 Lutidine of coal tar (abst.), 6, 36, 82: a new (abst.), 12, 233: and  
     quinoline (abst.), - - - - - 4, 272  
 Lyes, estimation of glycerol in (abst.), - - - - - 10, 182  
 Lysimeter, apparatus for determining solubilities, - - - 16, 715  
 Magnesia, action of, in expelling ammonia from salts and amines  
     (abst.), 6, 27: displacement of ammonia by (abst.), 9, 99: use of,  
     in the manufacture of chlorine (abst.), - - - - - 10, 85  
 Magnesia soaps, preparation of soluble (abst.), - - - - - 8, 64  
 Magnesium, action of, upon manganous salts, 16, 822: atomic weight  
     of, 19, 363: delicacy of test with sodium phosphate for (abst.), 1,  
     96: precipitation of, as oxalate (abst.), 1, 528: reducing action of,  
     16, 833: reduction of oxygen compounds by (abst.), 12, 152: sep-  
     aration of, from alkalis as oxalate (abst.), 1, 529: volumetric de-  
     termination of (abst.), 1, 564: zinc, and iron, as reducing agents  
     with ferric salts (abst.), - - - - - 4, 223  
 Magnesium amalgam, reductions with, 17, 789: basic acetate (abst.),  
     5, 19: carbonate, solubility of, in carbonic acid water (abst.), 7,  
     114: chloride, compounds of, with alcohols (abst.), 2, 135: chlo-  
     ride, manufacture of chlorine from (abst.), 9, 224: chloride, vola-  
     tility of, 19, 156: hydrosulphide as a source of hydrogen sulphide  
     (abst.), 6, 311: nitride, production of, by smothered combustion  
     of magnesium in air, P. 1, 2, 17: oxychlorides (abst.), 4, 230: py-  
     rophosphate, estimation of phosphoric acid as, 4, 135: (abst.), 5,  
     243: sulphate, heat of solution of (abst.), - - - - - 7, 52  
 Magnesium group, volume constitution of sulphates, selenates, and  
     chromates (abst.), - - - - - 1, 492  
 Magnetites, American, occurrence of vanadium in, - - - P. 1, 58  
 Maize, albuminoids of, 14, 313: investigations upon, 12, 369: the oil  
     of, - - - - - 20, 948  
 Malates, optical rotation of (abst.), - - - - - 4, 263  
 Maleic acid from  $\alpha$ -dibrompropionic acid (abst.), - - - 2, 172  
 Maleic and fumaric acids, contributions to the knowledge of (abst.), 1, 236  
 Maleic acid from  $\alpha$ -dibrompropionic acid (abst.), 2, 172: formation of  
     pyridine derivatives from (abst.), 7, 117: inactive, splitting up of  
     (abst.), 2, 369: optical rotation of (abst.), - - - - - 4, 263  
*iso*-Maleic acid (abst.), - - - - - 1, 295  
 Malonate, ethyl, action of ethylene bromide on (abst.), - - - 6, 83  
 Malonic acid, condensation products of, with benzaldehyde (abst.),

- 5, 237: electrolysis of (abst.), 2, 431: note on (abst.), 1, 494: preparation of (abst.), - - - - - 1, 385; 2, 435
- Malonic acid, allyl-, behavior of, with sodium hydroxide, 17, 1: allyl-, action of bromine on (abst.), 4, 271: chlor-, and its derivatives (abst.), 4, 270: heptyl-, and heptylacetic acid, 5, 10: hydroxy-propyl-, and its lactones (abst.), 4, 270: nitroso-, constitution of (abst.), - - - - - 5, 131
- Malt, analysis of, 16, 353, 559: and barley, nitrogenous constituents of (abst.), 6, 173: oil of, note on, 7, 22: the proteids of, - - - 18, 542
- Manganate, potassium, and some of its analytical uses (abst.), - - - 9, 119
- Manganese, action of hydrogen dioxide on (abst.), 10, 193: the actual accuracy of determinations of, 18, 808: in the ash of wheat, P. 2, 141: basic salts of (abst.), 4, 242: electrolysis of pyrophosphate of (abst.), 12, 170: electrolytic separation of, from other metals (abst.), 12, 173: existence of, in wines (abst.), 6, 200: precipitation of, by means of bromine vapor (abst.), - - - - - 5, 244
- Manganese amalgam (abst.), 1, 276: dioxide, action of, on haloid salts in presence of acetic acid (abst.), 5, 23: dioxide, action of hydrogen dioxide on (abst.), 2, 51: dioxide, notes on (abst.), 2, 344: dioxide of the Weldon process, composition of (abst.) 2, 96: ferrocyanide, 18, 1100; 19, 542, 547: higher oxides of, and their hydrates (abst.), 4, 168: an oxide of, soluble in water (abst.), 9, 99: palladium bromide, 16, 468: precipitated dioxide of, note on, 15, 114: salts, action of ozone on (abst.), 4, 234: silicated chloride of (abst.), - - - - - 6, 76
- Manganese and chromium compounds corresponding to potassium ferri- and ferro-cyanides (abst.), - - - - - 7, 140
- Manganese, determination of, in aluminum alloys, 18, 774: in alloys of iron (abst.), 1, 83: in cast and spiegel iron (abst.), 6, 242: in iron ores, 18, 385: in iron and ores, by use of hydrofluoric acid, 20, 504: in iron and steel, 19, 104: in manganese bronze, 15, 414: methods for, 17, 341: notes on Särnström's method of, 19, 139: as pyrophosphate, P. 1, 215: in steel, apparatus for colorimetric, 19, 286: in steel, sources of error in, 18, 498: volumetric, 17, 943; 18, 228: (abst.), 1, 329; 7, 91: volumetric, by precipitation as dioxide (abst.), - - - - - 1, 327
- Manganese, separation of, from aluminum and iron (abst.), 1, 325: from aluminum and iron, as oxalate (abst.), 1, 529: from iron (abst.), 1, 533; 9, 10: from iron and nickel, 8, 277: from nickel and zinc, 8, 277: from tungsten, 10, 1053: from zinc, - - - 1, 327; 8, 277
- Manganous hydroxide, oxidation of (abst.), 2, 96: salts, action of magnesium upon, - - - - - 16, 822
- Mannan, - - - - - 18, 219
- Mannide (abst.), - - - - - 5, 120
- Mannitol, heat of solution of, in water, 18, 156: second anhydride of (abst.), - - - - - 6, 38
- Mannose and levulose, synthesis of (abst.), - - - - - 12, 165

- Manure, value of ferrous sulphate as (abst.),** - - - - 6, 77  
**Manures, natural and artificial (abst.),** - - - - 10, 47  
**Maple sugar and syrup, composition of (abst.),** - - - - 7, 92  
**Marienbad spring water, analysis of (abst.),** - - - - 2, 135  
**Marine oils, analysis of,** - - - - 11, 155  
**Marsh's test for arsenic (abst.),** 12, 353, 477: quantitative determination of antimony according to (abst.), - - - - 12, 476  
**Maumené's test for oils (abst.),** - - - - 8, 108  
**Maximum work, principle of (abst.),** - - - - 7, 138  
**Maysin, a proteid of maize kernel, composition and properties,** - 19, 527  
**Measuring apparatus for reagents,** - - - - 19, 282  
**Medals, alchemical, exhibition of,** - - - - 13, 30  
**Meetings, general, of American Chemical Society,** 15, 177; 16, 73, 575.  
 (3); 17, (5), (51); 18, (7), (101); 19, (1), (51); 20, (7), (87)  
**Meetings of the Sections. See names of various sections.**  
**Mellitose in cotton-seed (abst.),** 7, 30: notes on (abst.), - - 12, 71  
**Melting-point of alloys, apparatus for determination of (abst.),** 4, 263:  
 apparatus for determination of (abst.), 4, 169; 8, 278; 12, 226: of  
 butter, determination of, 15, 661: of cyanogen iodide (abst.), 12,  
 225: of fats (abst.), 8, 86: of fats and fatty acids (abst.), 8, 65:  
 method for determination of (abst.), - - - - 1, 375  
**Menthene, transformation of terpine into a (abst.),** - - - 10, 191  
**Menthol, American, observations on,** 14, 149: action of carbon disulphide on (abst.), 12, 161: and some derivatives (abst.), 4, 144: oxidation of, by potassium permanganate (abst.), - - - 6, 164  
**Mercurialine, identified with methylamine (abst.),** - - - 1, 100  
**Mercuric chloride, action of heat on (abst.),** 4, 225: chloride, reactions of (abst.), 4, 238: chlorothiocyanate, 18, 906: cyanide, decomposition of, by dilute acids, 1, 556: iodide, solubility of, in fatty compounds (abst.), 8, 40: oxide, action of allylene on (abst.), 6, 167: oxide and salts, action of acetylene hydrocarbons on (abst.), - 6, 93  
**Mercurous iodide and bromide, crystallized (abst.),** - - - 9, 209  
**Mercury, action of sulphuric acid upon,** 19, 873; 20, 100: atomic weight of, 19, 365: atomic weight of, electrolytic determination of, 18, 1003: decomposition of sulphuric acid by, 20, 515: determination of (abst.), 12, 17: determination of, by titration with ammonium thiocyanate (abst.), 1, 323: determination of, in cinabar, electrolytic, 18, 96: double salts formed by haloid salts of (abst.), 4, 208: double salts of (abst.), 4, 231, 232: electrolysis of pyrophosphate of (abst.), 12, 171: electrolytic estimation of, 18, 169: (abst.), 1, 99: haloid salts of, decomposition of (abst.), 4, 233, 234: improved apparatus for distillation of (abst.), 1, 376: ores of, blow-pipe assay of (abst.), 1, 370: purification of (abst.), 1, 292, 377, 378: separation of, from antimony, arsenic and tin, 15, 205: separation of, from bismuth, 15, 28: separation of, from bismuth, copper, and lead (abst.), 9, 12: separation of, from bismuth and lead, 15, 101: separation of, from copper, 16, 423: separation

- of, from palladium (abst.), 9, 12: sublimation of (abst.), 8, 20:  
vapor of, reagent for (abst.), - - - - - 1, 336
- Mercury, ammoniacal compounds of, contributions to the knowledge  
of (abst.), 1, 259: fulminate, chemistry of (abst.), 7, 122: fulmi-  
nate, derivatives of (abst.), 7, 80: haloid salts, emission spectra of  
(abst.), 1, 374: haloid salts, thermochemistry of double decompo-  
sitions of (abst.), 4, 233, 234: oxychlorides and oxybromides,  
thermochemical study of (abst.), - - - - - 6, 127
- Mesitylenephthaloylic acid (abst.), - - - - - 5, 18
- Mesitylenesulphuric acid, products of fusion of, with potassium hy-  
droxide (abst.), - - - - - 1, 252
- Metal work, ancient, composition of (abst.), - - - - - 4, 171
- Metals, electrolytic separation of, notes on, 13, 140: molecular struc-  
ture of (abst.), 5, 21: precious, divining the presence of, 19, (23):  
separation of, by hydrobromic acid gas, 20, 797: separation of, by  
hydrochloric acid gas, 18, 1029: spectroscopic examination of the  
vapors obtained by heating some (abst.), 6, 232: use of pyrophos-  
phate double salts for determining, by electrolysis (abst.), 12, 168:  
vaporization of, *in vacuo* (abst.), - - - - - 4, 242
- Metallic compounds containing bivalent hydrocarbon radicals (abst.),  
4, 258: fragments from Peruvian sepulchres, analyses of (abst.),  
1, 276: hydroxides, compounds of, with iodine, 19, 333: hydrox-  
ides, dehydration of, by heat (abst.), 9, 189: phosphides (abst.),  
1, 168: reducing agents, contribution to knowledge of, 16, 833:  
salts, compiled data on the action of heat on, 5, 135: sulphides,  
action of ammonium salts on (abst.), - - - - - 1, 331
- Metalloids, behavior of chlorosulphonic acid with (abst.), - - - - - 4, 261
- Metallurgy, history of electric heating applied to, - - - - - 18, 287
- Metatitanic acid, - - - - - 13, 210
- Meteorite, Carcote, analysis of (abst.), 12, 155: Zsádányer, results of  
analysis of (abst.), - - - - - 1, 86
- Methane, aromatic derivatives of (abst.), 4, 202: determination of, by  
explosion, in technical analysis, 20, 343: and hydrogen in the at-  
mosphere, 17, 801: and hydrogen, determination of, by explosion,  
17, 986: illuminating power of (abst.), - - - - - 7, 213
- Methyl carbonate, heat of combustion of (abst.), 6, 90: chloride, den-  
sity and coefficient of expansion of (abst.), 1, 271: chloride and  
toluene in presence of aluminum chloride, hydrocarbons formed  
from (abst.), 1, 280, 398: cyanide (abst.), 2, 433: cyanide, prop-  
erties of mixtures of, with metyl and ethyl alcohols (abst.), 2, 430:  
formate, preparation of (abst.), 1, 389: iodoform (abst.), 10, 114:  
sulphate and methylsulphuric acid (abst.), 1, 492: violet test pa-  
per, - - - - - 4, 31
- Methyl alcohol, acetone in (abst.), 10, 195: determination of, in wood  
spirit (abst.), 1, 579: from the dry distillation of colophony (abst.),  
5, 123: preparation of pure (abst.), - - - - - 1, 389
- Methylamine, identical with mercurialine (abst.), 1, 100: bromosele-

- nate, 20, 572: carbonate, influence of temperature and pressure in the action of potassium chloride on (abst.), - - - 9, 103
- Methylamines, action of alkyl chlorides on (abst.), - - - 8, 95
- Methylaniline, action of nitrous anhydride upon, 13, 111: coloring matters derived from (abst.), - - - - - 1, 273
- Methylanthranol, amido- (abst.), - - - - - 5, 241
- Methylated diethyleneamines (abst.), - - - - - 2, 223
- Methylbenzoyl, direct chlorination of (abst.), - - - 8, 167
- Methyl-*pseudo*-chlorisatin from *m*-chlorquinolinemethyl chloride (abst.), - - - - - 7, 229
- Methylcrotonic and angelic acids, contributions to the history of (abst.), - - - - - 1, 396
- Methyldiacetoneamine (abst.), - - - - - 2, 175
- Methylene, commercial, determination of methyl alcohol in (abst.), 1, 486
- Methylene blue (abst.), 6, 86: and Lauth's violet, spectroscopic examination of, - - - - - 6, 304
- Methylene chloride, action of, on toluene and benzene (abst.), 6, 163: chloride, preparation of, 1, 522: chloriodide, note on (abst.), - 7, 214
- Methylene, diethoxy-, - - - - - 1, 522
- Methylformyl-*o*-amidochlorbenzoic acid from *m*-chlorquinolinemethyl chloride (abst.), - - - - - 7, 229
- $\alpha$ -Methylhydroxysuccinic acid (abst.), - - - - - 2, 342
- p*-Methylisatoic acid and its derivatives (abst.), - - - 7, 144
- Methylketole, an isomer of skatole (abst.), - - - 2, 174
- Methylmorphine hydroxide (abst.), 2, 98: iodide, action of potassium ferrocyanide on (abst.), - - - - - 2, 98
- Methylpropylcarbinol, active, and fungi which destroy it (abst.), 2, 132
- Methylsulphuric acid and methyl sulphate (abst.), - - 1, 492
- Methyltoluidine, coloring matters derived from (abst.), - - 1, 273
- Methyl- and dimethyldiacetonamine (abst.), - - - 2, 175
- Methyl- and ethylacetylcyanate of ethyl (abst.), - - - 6, 164
- Mica scale-pans, - - - - - P. 1, 126
- Micas, lithia, constitution of - - - - - 15, 245
- Microbes, influence of sunlight on (abst.), - - - - - 7, 77
- Micro-organisms, chemical action of (abst.), - - - 10, 84
- Microscopic preparations, staining of (abst.), - - - 1, 584
- Milk, acidity of, increased by boric acid, 18, 847: adulteration of, detection of (abst.), - - - - - 1, 570
- Milk analysis, 15, 579: (abst.), 4, 188; 8, 43: acetic acid used in (abst.), 8, 205: Adams' method for (abst.), 9, 13: asbestos cloth substituted for blotting-paper in (abst.), 9, 175: in Canada, official, 14, 363: contributions to the literature of, P. 1, 227: experiments in, - 13, 52
- Milk, analyses of, 13, 120: (abst.), 9, 122: artificial digestion of, 14, 89: average composition of (abst.), 8, 28; 10, 47: composition of, 15, 645: (abst.), 10, 190: condensed, 13, 160: condensed, estimation of sugar in, 15, 668: cow's, addition of goat's milk to (abst.), 8, 233: from cows fed on swill, composition of, - - - 12, 451



- Milk, determination in, of albumin, 16, 712: of casein, 15, 635: of fat, 10, 32: (abst.), 1, 358; 8, 61, 61; of fat, optical estimation (abst.), 1, 570: of fat, relative merits of the Wanklyn and the Adams method for 12, 488: of milk sugar, 18, 428, 1111: (abst.), 8, 205: of protein compounds (abst.), 9, 48: of solids (abst.), 1, 357: of water (abst.), - - - - - 1, 358; 4, 188; 8, 232
- Milk of elephant, composition of, 3, 55; 4, 157: goat's, addition of, to cow's milk (abst.), 8, 233: human, composition and methods of analysis of, 6, 252: human, contribution to the study of (abst.), 9, 113: influence of sterilization upon, 13, 34: nitrates and nitrites as evidence of adulteration of (abst.), 9, 13: in the Paris hospitals (abst.), 8, 62: porpoise, composition of (abst.), 7, 290: porpoise, fat of (abst.), 8, 184: preserved, alterations of (abst.), 5, 28: proteids of, 13, 72: skim-milk, and whey, comparative study of, - - - - - 15, 347
- Milk and butter, determination of solids and fat in (abst.), - - - 10, 27
- Milk and urine of herbivorae, estimation of nitrogen in (abst.), - - 8, 279
- Milk ripener and purifier (abst.), - - - - - 8, 43
- Milk sugar, determination of, in milks, 18, 428, 1111: determination of in milk (abst.), 8, 205: determination of mixtures of, with cane-sugar (abst.), 7, 149: examination of (abst.), 7, 85: existence of the proximate constituents of, in plants (abst.), 8, 62: partial synthesis of (abst.), - - - - - 2, 89
- Mineral group from York, Pa. (note), - - - - - 15, 543
- Mineral water from Irondale, W. Va., analysis of, - - - - - 6, 123
- Mineral waters, determination of lithium in, 12, 214: from northwestern Pennsylvania, analyses of, 18, 915: from Texas, analysis of, 11, 141
- Minerals, action of sulphur monochloride on, 20, 289: behavior of, in hydrobromic acid gas, 20, 809: carbon, analyses of, 13, 143: humite, examination of (abst.), 7, 226: and rocks, microchemical analysis of (abst.), 1, 95: Spanish, analyses of (abst.), - - - 2, 43
- Mint, United States, smelting furnace of, - - - - - 7, 159
- Models for illustrating relationship between gas volumes and molecular weights, - - - - - 15, 542
- Mohr's burette, modification of, - - - - - 3, 124
- Moisture remaining in gases dried by means of phosphorus pentoxide (abst.), 10, 67: retained by gases dried by means of sulphuric acid (abst.), 7, 295: in a soil, physical effects of salts and fertilizers upon, - - - - - 19, 620
- Moisture and oil, determination of, in linseed cakes, etc., - - - 16, 114
- Molasses, spontaneous combustion of, - - - - - 19, 538
- Mold, influence of vegetable, on the nitrogenous content of oats, - 19, 605
- Molding sand, analysis of a, - - - - - 17, 502
- Molecular refraction of terpenes (abst.), 4, 173: rotation, synthesis of bodies possessing (abst.), 6, 74: structure of the metals (abst.), 5, 21: volume of salt solutions (abst.), 6, 48: volumes of some double chlorides (abst.), 6, 232: weight of liquids determined by

- means of surface tension, 18, 514: weights of some carbon compounds, - - - - - 26, 546
- Molecule, determination of number of atoms in (abst.), - - - 6, 47
- Molybdate, ammonium, a modified solution of, - - - 18, 445
- Molybdates, complex (abst.), 1, 111: of rare earths, - - - 17, 483, 520
- Molybdenum, action of carbonyl and sulphur chlorides upon, 15, 206:  
atomic weight of, 15, 397; 16, 184; 18, 207: chemical behavior of,  
17, 381: compounds, reduction of (abst.), 5, 51: separation of,  
from tungsten, - - - - - 19, 242
- Molybdenum carbide, 17, 421: dioxide, action of, on silver salts,  
16, 569: hexachloride, attempt to prepare, 16, 577: trioxide, action  
of phosphorus pentachloride upon, 16, 425: trioxide, chemical  
behavior of, - - - - - 17, 381
- Molybdenyl chloride, action of ammonia gas upon, - - - 15, 61
- Molybdic acid, action of haloid acids upon, 15, 18: determination of  
phosphorus by means of, P, 1, 167: on a hydrate of (abst.), 5, 118:  
reaction of, with potassium chromate and dichromate, - - - 16, 565
- Monazite sand, analysis of, - - - - - 18, 782
- Mond and Tyrer, banquet to, - - - - - 17, 997
- Monochromatic flame, lamp for, - - - - - 15, 121
- Morphine, action of benzoyl chloride on (abst.), 2, 98: action of potas-  
sium ferricyanide on (abst.), 2, 97: action of potassium perman-  
ganate on (abst.), 2, 98: in ammoniacal solution, action of air  
on (abst.), 2, 98: complex function of (abst.), 4, 76: determina-  
tion of, in opium, 7, 45; 10, 143: (abst.), 7, 33; 10, 45: fallacies  
of post-mortem tests for, 16, 799: separation of, from fatty matters  
(abst.), 9, 15: solubility of (abst.), 4, 76: transformation of, into  
picric acid (abst.), - - - - - 4, 76
- Mortar, on the hardening of, - - - - - 16, 733
- Mortars, ancient (abst.), - - - - - 10, 158
- Motor, hot air, for laboratories, - - - - - 17, 494, 520
- Mucate, antimonyl potassium (abst.), - - - - - 6, 35
- Mucic acid and saccharic acid, derivatives of (abst.), - - - 10, 17
- Muffle for incineration of sugar, - - - - - 16, 151
- Museum, contributions to, - - - - - 2, 6
- Mustard, method for analysis of, - - - - - 3, 130
- Mustard oil, examination of (abst.), 8, 87: ethyl, new formation of  
(abst.), - - - - - 2, 221
- Mustard oil glycolide (abst.), - - - - - 4, 267
- Mustard oils, action of, on the amido acids (abst.), 7, 85: aromatic  
bases isomeric with (abst.), 2, 93: preparation of (abst.), - 5, 26
- Musts, examination of, for sugar and acid (abst.), 7, 63: of 1883, exam-  
ination of, for acids and sugar (abst.), - - - - - 6, 243
- Muter's method for analysis of fats and oils, - - - - - 15, 110
- Myristic acid, oxidation of, with nitric acid (abst.), - - - 8, 205
- Naphtha, determination of, in petroleum, P. 1, 119: distillation of, in  
current of steam (abst.), - - - - - 7, 33

Naphthalene, action of iodine on, at high temperatures (abst.),	4, 232:
action of phthalic anhydride on, in presence of aluminum chloride (abst.),	1, 485: alpha- and beta-position in (abst.),
2, 94, 132: constitution of some bromine derivatives of (abst.),	5, 91: and benzene, compounds of, with antimony trichloride (abst.),
5, 60: and benzhydrol, condensation of (abst.),	2, 369: derivatives of (abst.),
6, 87, 164: derivatives of, new syntheses of (abst.),	- - - 7, 115
Naphthalene series, law of substitution in (abst.),	- - - 4, 206
Naphthalene tetrachloride, action of water and silver hydroxide on	2, 205
Naphthalene, azo- (abst.),	7, 228: dinitro- (abst.), - - - 2, 369
$\beta$ -Naphthalene, diazo-, action of, on phenols	- - - 6, 151
Naphthalenes, amido-, transformation of $\alpha$ - and $\beta$ -naphthol into (abst.),	- - - 4, 270
$\alpha$ -Naphthoic acid, nitro- (abst.),	- - - 7, 147
$\alpha$ -Naphthol and $\beta$ -naphthol, transformation of, into amidonaphthalenes (abst.),	- - - 4, 270
$\beta$ -Naphthol, action of chloroform on (abst.),	4, 241: dihydric alcohol derived from (abst.), - - - 4, 77
Naphthol, chloro-, bromo-, and iodo-, action of aluminum chloride upon (abst.),	8, 94: chloro-, from $\beta$ -naphtholsulphonic acid (abst.),
4, 229: dinitro- $\alpha$ -, amine derivatives of, 19, 927: dinitro- $\alpha$ -, chlorination of, 19, 927: dinitro- $\alpha$ -, salts of, with various metallic bases, 19, 923: diphenyldiamido- (abst.),	- - - 2, 170
$\beta$ -Naphtholaldehyde (abst.),	- - - 5, 23
$\beta$ -Naphtholsulphonic acid, dichloronaphthalene and chlornaphthol from (abst.),	- - - 4, 229
Naphthoquinone (abst.),	2, 91: compounds of, with toluidine and ethylaniline (abst.), - - - 5, 19
Naphthoquinone, dichlor-, action of amines on (abst.),	- - - 4, 265
Naphthylamine, compound of cœnanthaldehyde with, 5, 2: diethyl-, action of sulphuric acid on (abst.),	4, 201: diethyl-, preparation of (abst.),
4, 200: dimethyl-, oxidation of (abst.),	- - - 2, 91
$\beta$ -Naphthylamine, action of diazo compounds on (abst.),	- - - 8, 22
Naphthylaminesulphonic acids, conversion of, into dichloronaphthalene (abst.),	- - - 10, 42
$\alpha$ -Naphthylsulphonic acid, action of phosphorus pentachloride on (abst.),	- - - 4, 228
Naphthylsulphuric acid (abst.),	- - - 4, 227
Narceine, iodides of, 16, 362: reaction of (abst.),	- - - 9, 177
Nebraska Section, meetings of, 18, (33), (68), (94);	19, (13), (25), (41), (66)
Neodidymium, separation of, from iron,	- - - 20, 846
Neodidymium molybdate, composition and solubility of, 17, 532: tungstate, composition and solubility of,	- - - 17, 530
Nephrites from lake dwellings, analyses of (abst.),	- - - 4, 206
Nessler comparer,	- - - 16, 872
Nesslerizing, tubes of colored glass for,	- - - 6, 121
Neutrality, indicator for (abst.),	- - - 5, 245

- New York Section, meetings of, 17, (2), (38), (68); 18, (2), (28), (37).  
 (61), (69), (72), (95), (120), (125); 19, (17), (25), (37), (43).  
 (61), (64); 20, (5), (17), (32), (63), (82), (101), (108).
- Niagara river water, aeration and composition of, - - 12, 449
- Nickel, atomic weight of, 16, 182; 17, 207; 20, 165: decomposition of  
 (abst.), 10, 180: determination of, in aluminum alloys, 18, 773:  
 determination of, electrolytic, 18, 658: determination of, by pre-  
 cipitation as oxalate (abst.), 1, 327: determination of, in nickel-  
 steel, 16, 96; 16, 110; 17, 125: electrolysis of pyrophosphate of  
 (abst.), - - - - - 12, 169
- Nickel, separation of, from aluminum and iron, as oxalate, 1, 529: sep-  
 aration of, from arsenic, by hydrochloric acid gas, 18, 1042: sep-  
 aration of, from bismuth, electrolytic, 15, 104: separation of,  
 from cobalt (abst.), 4, 166; 7, 250: separation of, from iron and  
 manganese (abst.), 8, 277: separation of, from manganese and  
 zinc (abst.), 8, 277: separation of, from zinc (abst.), - -  
 - - - - - 1, 332; 6, 288; 8, 277; 9, 9
- Nickel amalgam (abst.), 1, 276: arsenates, formation and constitution  
 of two (abst.), 8, 49: chloride, action of hydrogen sulphide on  
 (abst.), 4, 240: chloride, compounds of, with aniline, etc. (abst.),  
 1, 165: sulphate, action of insoluble sulphides on (abst.), - 4, 239
- Nickel minerals, new, - - - - - 14, 205
- Nickeliferous pyrrhotite, constitution of, - - - - - 14, 369
- Nickelo-nickelic hydrate, 18, 901: oxide, formation of (abst.), - 1, 295
- Nickel-steel, determination of nickel in, - - - - - 16, 96; 17, 125
- Nicotine, determination of, in tobacco, 2, 338: (abst.), 4, 195: and nico-  
 tinic acid (abst.), - - - - - 2, 55
- Nicotinic acid (abst.), 2, 55: from pyridine (abst.), - - - 4, 176
- Nile, the river, analyses of water of, - - - - - 15, 34, 84
- Niobite of the Iser mountains (abst.), - - - - - 2, 171
- Niobium oxide, reaction of carbon tetrachloride with, - - - 18, 532
- Niobium. See also Columbium.
- Nitramidobenzenes, isomeric, action of sulphuric acid on (abst.), - 2, 95
- p*-Nitraniline, action of carbon bisulphide on (abst.), - - - 4, 264
- Nitranilines, chlor- (abst.), - - - - - 2, 57
- Nitrates, action of, on alkaline sulphides (abst.), 6, 142: action of heat  
 on, 5, 162: action of hydrochloric acid gas upon, 17, 683: behavior  
 of, in Kjeldahl process (abst.), 7, 290: detection of, in potassium  
 chlorate (abst.), 9, 174: determination of, P. 2, 150: determina-  
 tion of, in potable water, P. 2, 5; 16, 122, 193: fermentation of  
 (abst.), 5, 117: modification of Gunning's method for determining,  
 18, 1102: reduction of, in soils (abst.), 5, 117, 118, 119: in water,  
 phenolsulphonic acid process for, - - - - - 16, 72
- Nitrates and nitrites, determination of, in water (abst.), 4, 163: as evi-  
 dence of adulteration of milk (abst.), 9, 13: reduction of, to am-  
 monia in water analysis (abst.), - - - - - 4, 163
- Nitrating under various conditions (abst.), - - - - - 6, 309

- Nitric acid, action of, on pentamethylbenzene (abst.), 10, 37: action of, on phenylisocrotonic acid (abst.), 7, 87: action of, on sugar, 9, 45: apparatus for determining (abst.), 9, 217: behavior of, with soda-lime (abst.), 1, 100: new compounds of, with ammonia (abst.), 4, 234: condensation of, 17, 576: determination of (abst.), 6, 240; 10, 192: determination of, as ammonia (abst.), P. 2, 9: determination of, by means of indigo, in water analysis (abst.), 1, 541: determination of, in lime juice (abst.), 1, 367: determination of, as nitric oxide (abst.), 1, 540; 4, 258: determination of, in the presence of acids which mask its reactions (abst.), 6, 239: determination of, rapid (abst.), 7, 293: determination of, according to Schulze-Tiemann (abst.), 12, 353: determination of, in soils (abst.), 4, 258: determination of, volumetric (abst.), 7, 61: distillation of, 17, 580: distillation of, from sodium nitrate and sulphuric acid, 13, 246: in healthy urine, and method for its determination, P. 2, 98: loss of, in leaden chamber process, etc. (abst.), 4, 73: oxidation of myristic acid with (abst.), 8, 205: titration of, for hyponitric acid, - - - - - P. 2, 149; 1, 18
- Nitric and chloric acids, color reactions of, with certain aromatic bodies, 19, 156: and hydrobromic acids, conversion of sulphides into sulphates by means of (abst.), 6, 33: and nitrous acids, detection of (abst.), - - - - - 7, 61
- Nitric nitrogen produced by the pea, - - - - - 20, 793
- Nitric oxide, absorbents of (abst.), 4, 160: action of the copper-zinc couple on (abst.), 5, 233: action of, on sulphur dioxide (abst.), 4, 72
- Nitride, magnesium, production by smothered combustion of magnesium in air, - - - - - P. 1, 2, 17
- Nitrides. See Hydronitric acid.
- Nitrification (abst.), 7, 23: oxidation of iodine in the process of (abst.), 7, 287
- Nitrifying organisms, effect of acidity on development of, - 18, 475
- Nitriles, action of hydroxylamine on (abst.), 6, 160: action of organic acids upon, 20, 648: and carboxylic acids from aromatic amines (abst.), 6, 85: conversion of, into imides (abst.), 5, 123: from form-anilide (abst.), 8, 74: preparation of, from amides, P. 2, 123: produced in destructive distillation of beet root residues (abst.), 1, 277
- Nitrites, action of heat on, 5, 170: determination of (abst.), 10, 85: determination of, in water, 18, 21: in water, test for (abst.), - 4, 163
- Nitrites and nitrates, determination of, in water (abst.), 4, 163: reduction of, to ammonia in water analysis (abst.), - - - 4, 163
- Nitro compounds of the aliphatic series, constitution of (abst.), 8, 202, 274: behavior of, towards hydrogen sulphide (abst.), 2, 178: determination of nitrogen in (abst.), - - - 7, 91
- p*-Nitro compounds, electrolytic reduction of, in sulphuric acid solution, - - - - - 17, 855
- Nitro derivatives of resorcinol (abst.), - - - - - 5, 129
- Nitro group in organic compounds, volumetric determination of, 19, 812

- Nitro acids derived from ketones (abst.), 4, 208: of fatty series, preparation of (abst.), - - - - - 2, 291
- Nitrocamphor, isomeric with camphonitrophenol (abst.), - - - 12, 71
- Nitrocellulose, separation of, from nitroglycerol (abst.), 1, 366: soluble, manufacture of, - - - - - 17, 411
- Nitrogen, ammoniacal, determination of, in soils (abst.), 6, 169: analysis of organic bodies containing (abst.), 2, 352: apparatus for determination of, modified (abst.), 4, 160: atmospheric, assimilation of, in cotton plant, 18, 425: atmospheric, assimilation of, a correction, 16, 432: atmospheric, assimilation of, by plants, 12, 145: (abst.), 12, 72: atmospheric, fixation of (as cyanides, etc.), 11, 2, 31: atmospheric, fixation of, by soils, 8, 18; 10, 12: atomic weight of, 19, 362: atomic weight of, determination of, 18, 1045: chemistry of, as disclosed in the constitution of the alkaloids, 9, 128: chemistry of, literature on the, 9, 142: of coal, behavior of, during destructive distillation (abst.), 5, 95: and copper, double iodide of (abst.), 6, 34: density of, 16, 188; 20, 170: free, evolved by fermentation (abst.), 4, 267: free, formation of nitrous acid and ammonia from (abst.), 12, 350: and halogens, analysis of organic substances containing (abst.), 1, 337: nitric, produced by the pea, 20, 793: solidification of (abst.), 7, 27: stereochemistry of molecules containing (abst.), - - - - - 12, 166
- Nitrogen, determination of, in agricultural analysis (abst.), 1, 281, 351: in aluminum, 18, 771: in coal and coke (abst.), 5, 95: by combustion with calcium hydroxide (abst.), 6, 168: by Dumas' method, apparatus for (abst.), 1, 375: error in, 20, 961: in explosive ethereal nitrates (abst.), 1, 102, 542: in fertilizers (abst.), 1, 279; 9, 13: in fertilizers containing nitrates, 17, 567: (abst.), 1, 356: in fertilizers, the Gunning method for, 16, 795: in guano (abst.), 1, 355: in horn, etc. (abst.), 1, 542: by Kjeldahl method (abst.), 7, 179; 8, 81; 10, 45: by Kjeldahl method, in aromatic compounds, 7, 108: by Kjeldahl method, digestion furnace for (abst.), 7, 291: by Kjeldahl method, error in, 13, 212: by Kjeldahl method, modified (abst.), 11, 54: new method for (abst.), 8, 25: in milk and urine of herbivora (abst.), 8, 279: in nitrates and nitro compounds (abst.), 7, 91: in nitroglycerol (abst.), 1, 102: in organic elementary analysis (abst.), 1, 254, 336, 542; 5, 243: in organic elementary analysis, modification of Schiff's apparatus for (abst.), 1, 375: by Ruffe's method (abst.), 6, 96: in steel (abst.), 1, 562: safety tube for, 18, 227: in waters, 9, 162: in waters, beer, etc., (abst.), - - - - - 4, 162
- Nitrogen iodide (abst.), 1, 112: iodide, researches on (abst.), 6, 34: monoxide, density of, 20, 170: oxides (abst.), 7, 200: oxides, estimation of, as ammonia (abst.), 4, 160: oxides, heat of formation of (abst.), 2, 433: tetroxide, behavior of, with sulphuric acid (abst.), 4, 265: trioxide dissolved in carbon disulphide, action of, upon various organic compounds, - - - - - 12, 71 54

Nitrogenous constituents of barley and malt (abst.), 6, 173: content of oats, influence of vegetable mold on, 19, 605: principles of vegetable soil (abst.), - - - - -	9, 104
Nitroglycerol, detonating submerged, P. 1, 2, 2: determination of nitrogen in (abst.), 1, 102: the manufacture of, 17, 263: separation of, from nitrocellulose (abst.), - - - - -	1, 366
Nitronaphthalenes, commercial preparation of, - - - - -	19, 532
Nitrophenol, Fittica's fourth (abst.), - - - - -	2, 371
Nitroprusside, sodium, preparation of, - - - - -	19, 23
Nitrosaccharose, 4, 147: correction, - - - - -	4, 186
iso-Nitroso compounds (abst.), - - - - -	5, 65; 9, 195
Nitroso- <i>o</i> -cresol (abst.), - - - - -	7, 55
Nitroso derivatives of aromatic diamines (abst.), - - - - -	8, 55
Nitrosophenol, action of ammonia on (abst.), 7, 86: ethers of (abst.), 7, 87	
Nitrophenols (abst.), - - - - -	7, 230
Nitrosyl chloride, action of, on unsaturated hydrocarbons (abst.), 1, 170	
Nitrous acid, action of, on resorcinol diethyl ether (abst.), 1, 161: and ammonia, formation of, from free nitrogen (abst.), 12, 350: behavior of diamines with (abst.), 6, 162: detection of (abst.), 1, 105; 6, 288; 7, 61: estimation of, gasometric (abst.), 10, 67: estimation of, in potable waters, etc., 1, 136: estimation of, volumetric (abst.), 6, 170: presence of, in the atmosphere (abst.), - 12, 69	
Nitrous anhydride, action of, on glycerol (abst.), 5, 233: action of, on organic compounds, 12, 7, 54; 13, 111: existence of, in form of vapor (abst.), - - - - -	4, 266
Nitrous oxide, determination of (abst.), - - - - -	4, 160
Nomenclature and notation, report on, 8, 116: of alkaloidal salts 11, 130	
Non-metals, action of, on alkaline selenocyanates (abst.), - 8, 179	
North Carolina Section, meetings of, 18, (60), (97); 19, (22), (49); 20, (73)	
North Eastern Section, meeting of, - - - - -	20, (45)
North Sea expedition, results of Norwegian (abst.), - 1, 496; 2, 289	
Norwegium (abst.), 2, 224: in American lead, 2, 213: atomic weight and properties of (abst.), 1, 527: properties of (abst.), - 1, 398	
Nux vomica, alkaloids of (abst.), - - - - -	5, 95; 7, 116
Oat kernel, proteids of, - - - - -	18, 621
Oats, influence of vegetable mold on the nitrogenous content of, - 19, 605	
Octylbenzene, <i>p</i> -amido (abst.), - - - - -	7, 176
Octyltoluene, amido- (abst.), - - - - -	7, 176
Oenanthaldehyde, compounds of with aniline, xylidine, and naphthylamine, 5, 2: on the condensation products of (abst.), 5, 94: and oenanthyl chloride, action of, on dimethylaniline in the presence of zinc chloride (abst.), - - - - -	9, 7
Oenanthalaniline, oenanthaxylidine, and oenanthalnaphthylamine (abst.), - - - - -	5, 66
Oenocyanine (abst.), - - - - -	5, 119
Oenogallic acid, determination of, in wines (abst.), - - - - -	4, 191, 233
Oil, device for weighing, - - - - -	16, 882

- Oil, almond, unreliability of test for (abst.), 8, 87: from artificial butter, specific gravity of (abst.), 4, 188: castor, products of oxidation of (abst.), 8, 110: castor, solid residue from the distillation of, *in vacuo*, 5, 4: cocoanut, relation of, to methods of butter analysis, 7, 188: cod liver, examination of (abst.), 10, 70: of corn, 20, 948: cotton-seed (abst.), 8, 206: cotton-seed, adulteration of, with tallow (abst.), 10, 86: creosote, estimation of phenol in (abst.), 6, 38: earth-nut, sensibility of, to heat when electrified (abst.), 10, 173: essential, of *Licari kanali* (abst.), 4, 233: essential, of *Satureia hortensis*, occurrence of carvacrol in (abst.), 5, 24: essential, of savory (*Satureia Montana*) (abst.), 4, 77: of geranium, detection of adulterations in (abst.), 1, 105: Indian geranium (abst.), 12, 234: Japanese camphor (abst.), 6, 313: lemon (abst.), 7, 247: of malt, note on, 7, 22: mineral, detection of, in fatty oils and fuller's grease (abst.), 8, 38: mineral, detection of, in resin oil, 8, 65: mineral, purification of, with sulphurous acid (abst.), 8, 206: olive, adulteration of (abst.), 8, 40: distinction of, from cotton-seed oil (abst.), 4, 192: olive, test for (abst.), 7, 250: petroleum, on explosions of, etc., P. 1, 115: rosin, quantitative separation of, from mineral oils, 16, 385: sesame, detection of (abst.), 9, 177: see also, Kerosene; Turpentine.
- Oil and fat, detection of hydrocarbons in (abst.), 8, 86: and moisture determination of, in linseed cakes, etc., - - - - 16, 114
- Oil-cake, determination of fat in (abst.), - - - - 10, 157
- Oil-cakes used in feeding, contributions to study of, - - - - 15, 656
- Oil-gas, 16, 688: use of, in blast lamp (abst.), - - - - 1, 91
- Oils, action of, on polarized light (abst.), 9, 176: action of sulphur chloride on (abst.), 10, 116: apricot, peach, and walnut (abst.), 8, 184: bromine and iodine absorption of (abst.), 8, 100: California vegetable, properties of, 17, 935: cereal, heat of combustion of, 20, 309: coefficient of expansion of (abst.), 8, 99: commercial, analysis of (abst.), 2, 433: containing unsaponifiable fats, examination of (abst.), 8, 39: determination of fatty acids in (abst.), 6, 100: determination of glycerol in (abst.), 8, 102, 104: determination of heat of bromination of, 18, 378: determination of sulphur in (abst.), 10, 44: essential, chemistry of (abst.), 7, 121: essential, constituents of some (abst.), 7, 121: essential, detection of adulterations of (abst.), 1, 368: essential, detection of alcohol in (abst.), 1, 582: essential, of some Ericaceae, components of (abst.), 1, 395: essential, and terpenes (abst.), 7, 246: free fatty acids in (abst.), 11, 55: fatty, detection of, in mineral oils (abst.), 7, 226: fatty, determination of glycerol produced by the saponification of (abst.), 8, 204: fatty, on the solidification of (abst.), 6, 198: fatty, solubility of iodine in (abst.), 7, 202: fixed, examination and chemistry of (abst.), 8, 98, 103: lubricating, analysis of, 15, 265: marine, analysis of, 11, 155: Maumené's test for (abst.), 8, 108: mineral, detection of fat oils in (abst.), 8, 39: mineral lubricating,



- agent for thickening (abst.), 8, 109: mineral, quantitative separation of rosin oil from, 16, 385: oxidation of (abst.), 8, 106: specific gravity of (abst.), 8, 98: titration of, by means of hypobromite solution (abst.), 6, 99: Valenta's acetic acid test for (abst.), 8, 101, 103: vegetable, examination of (abst.), 10, 70: viscosity of, instrument for measuring, 15, 173, 454: viscosity of, method of determining (abst.), 7, 93; 8, 85: see also Mustard oils.
- Oils and fats, analysis of (abst.), 10, 194: determination of solid fat in 18, 259: formation of basic salts in the saponification of (abst.), 8, 41: Koettstorfer figure of dark-colored, 16, 408: methods of testing, 15, 153: Muter's method for analysis of, 15, 110: quantitative estimation of (abst.), - - - - - 6, 245
- Oils and grease, improvements in bleaching or purifying (abst.), - 8, 43
- Oleic acid, action of sulphuric acid on (abst.), 8, 85: conversion of, into palmitic (abst.), 7, 64: oxidation of, by potassium permanganate (abst.), 7, 207; 8, 42: quantitative separation of, from stearic acid (abst.), - - - - - 1, 360
- Oleomargarine, detection of, - - - - - 3, 83
- Oleum cynae* (abst.), - - - - - 7, 122
- Onions, analysis of, - - - - - P. 1, 2, 60
- Opium, determination of morphine in, 7, 45; 10, 143: (abst.), 4, 194; 7, 33; 10, 45: separation of the alkaloids of (abst.), - - - 9, 176
- Opium alkaloids, solubility of (abst.), - - - - - 9, 216
- Optically inactive compounds, splitting of (abst.), - - - 6, 90
- Orange, bitter, proximate principles of (abst.), - - - - 8, 202
- Orcinol, new isomer of (abst.), 4, 227: and some other dihydroxytoluenes (abst.), - - - - - 5, 61
- Ores, determination of sulphur in (abst.), 1, 560: zinc, analysis of, 11, 49
- Organic acid obtained by the action of alcoholic potassium hydroxide on a mixture of chloroform and acetone (abst.), - - - 9, 102
- Organic compounds, synthesis of, by electrolysis (abst.), - - - 4, 239
- Organic matter, determination of, by oxidation in the wet way, 15, 71: effect of decomposing, on natural phosphates, 14, 353: in fertilizers, oxidation of, by *aqua regia*, 17, 86: methods of estimating, by reduction of potassium permanganate (abst.), 6, 41: in water, differentiation of, 20, 497: in water, direct oxidation of, - 14, 233
- Organization of the American Chemical Society, - - - P. 1, 3, 18
- Orpine, peculiarities of commercial (abst.), - - - - 8, 97
- Orsat's apparatus for estimation of oxygen (abst.), - - - 6, 97
- Orthodiketones, color reaction for (abst.), - - - - 8, 58
- Orthosilicic acid, existence of, - - - - - 19, 832
- Osmotic pressure, - - - - - 20, 579
- Oxalate, acid ammonium, influence of, on the solubility of neutral oxalate (abst.), - - - - - 8, 71
- Oxalic acid (abst.), 2, 430: action of, on chlorates, bromates, and iodates (abst.), 1, 384: action of potassium permanganate upon, P. 2, 153: formation of, in plants (abst.), 9, 7: oxidation of, by

- cupric ammonium solution (abst.), 1, 490: produced in oxidation of animal substances (abst.), 1, 106: reaction between, and ferric salts (abst.), 8, 198: surface-tension of solutions of, 20, 129; synthesis of (abst.), 5, 50: in vegetation (abst.), - - - 8, 37
- Oxalines and glyoxalines (abst.), - - - - - 5, 19
- Oxime, a new quinone-, - - - - - 13, 111
- Oxides, metallic, reduction of, at high temperatures, 20, 232: reduction of, in sunlight, - - - - - 4, 3
- Oxycellulose for the determination of vanadium (abst.), - - - 8, 78
- Oxycelluloses, the natural, - - - - - 18, 8
- Oxydiphenyl bases (abst.), - - - - - 10, 18
- Oxygen, action of, upon zinc ethide (abst.), 12, 156: new absorbent for (abst.), 7, 177: active (abst.), 4, 207: active, in barium dioxide, determination of (abst.), 2, 132: active, production of (abst.), 5, 19: in air, apparatus for determining (abst.), 1, 585: atomation of, 5, 205: atomation of, at elevated temperatures, 6, 17: atomic weight of, 19, 360: compounds, reduction of, by magnesium (abst.), 12, 152: density of, 16, 188; 20, 170: density and atomic weight of, 18, 198: determination of atomic weight of (abst.), 6, 48: and the halogens, relative affinities of (abst.), 1, 280: improved form of Orsat's apparatus for estimation of (abst.), 6, 97: some industrial application of (abst.), 10, 197: liquid, as a cooling agent (abst.), 7, 27: nascent, conversion of carbon monoxide into carbon dioxide by, 5, 78: preparation of, continuous (abst.), 8, 21: relative affinity of, for hydrogen and carbon monoxide (abst.), 1, 164: sulphur, and halogens, combined with hydrogen, reciprocal displacements of (abst.), 1, 385: volumetric estimation of, by means of phosphorus (abst.), 1, 372: in water, determination of (abst.), - - - - - 2, 172
- Oxymorphone, Schützenberger's (abst.), - - - - - 2, 98
- Oxyphenylacetic acid. See Phenoxyacetic acid.
- Oxyphenylpropionic acid. See Phenoxypropionic acid.
- Oxypropyltoluidine (abst.), - - - - - 4, 206; 5, 29, 58
- Oxysulphides, organic, action of chlorine on (abst.), - - - 4, 263
- Ozokerite and ceresine from Galicia, - - - - - P. 1, 121
- Ozonator, 1, 8: new and powerful form of, - - - - - 1, 431
- Ozone, action of, on carbon monoxide, 1, 450: action of, on coloring-matter of plants, 1, 228: action of, on manganese salts (abst.), 4, 234: action of, on organic substances, 1, 447: bleaching of syrups by, 1, 229: constitution of (abst.), 18, 286: determination of, in the air (abst.), 4, 162: efficiency of various means of producing, 1, 431: and electricity, researches on (abst.), 1, 171: formation of, during slow oxidation of phosphorus (abst.), 2, 351: and hydrogen dioxide (abst.), 2, 34, 59, 147: and hydrogen dioxide both produced by action of air on moist phosphorus 3, 5: liquefaction of (abst.), 4, 238: preparation of, by chemical methods 1, 442: not produced in crystallization of iodic acid, 1, 445: pro-

- duction of, 1, 8: production of, by heating substances containing oxygen, 2, 411: relations between temperature and volume in producing, 1, 8: researches on (abst.), 4, 235, 237: solubility of, in water, 1, 220: thermochemistry of (abst.), - - - 4, 266
- Ozonization of air, products obtained in, - - - 1, 145
- Palissandre wood. See Rosewood.
- Palladious chloride, carbamido- (abst.), - - - 2, 137
- Palladium, atomic weight of, 16, 184; 17, 208: behavior of, towards carbon monoxide or hydrogen (abst.), 5, 62: separation of, from mercury (abst.), - - - 9, 12
- Palladium double bromides, 16, 465: manganese bromide, 16, 468: potassium bromide 16, 466, 467: sodium bromide, 16, 467: strontium bromide, - - - 16, 467
- Palm nut meal, determination of fat in (abst.), - - - 8, 28
- Palm wine, composition of (abst.), - - - 1, 402
- Palmella cruenta*, coloring-matter of (abst.), - - - 1, 403
- Palmitic acid, conversion of oleic acid into (abst.), - - - 7, 64
- Pancreatic juice, action of, on starch and glycogen (abst.), - 1, 173, 273
- Pansy, estimation of amount of salicylic acid in (abst.), - - 6, 233
- Papaverine, new test for (abst.), - - - 1, 545
- Paper hangings, amounts of arsenic found in various, - - - 2, 339
- Paper pulp, preparation of (abst.), - - - 5, 122
- Parabanic series, new derivative of (abst.), - - - 1, 487
- Paraffin, facts about (abst.), 12, 157: specific gravity of (abst.), 5, 236: use of, as absorbent of vapors of ether, chloroform, benzene, and carbon bisulphide (abst.), - - - 1, 585
- Paraffin oil, detection of, in lard (abst.), 4, 192: shale deposit, recent discovery of, in Servia (abst.), - - - 6, 244
- Paraffins, new (abst.), 7, 66: preparation of (abst.), - - - 5, 130
- Paraxanthine (abst.), - - - 5, 65
- Patent law, (English) as amended in 1883 (abst.), 6, 26: discussion of preceding paper on (abst.), - - - 6, 31
- Patents, abstracts of American, relating to chemistry, 1, 121, 177, 260, 306, 405, 457, 504, 590; 2, 66, 100, 138, 189, 227, 295, 353, 372, 402, 437, 457; 3, 63, 157; 6, 50, 107, 143, 176, 201, 246, 292, 314; 7, 34, 67, 94, 125, 151, 181, 215, 232, 252, 297; 8, 29, 44, 66, 88, 111, 168, 185, 207, 234, 280; 9, 18, 39, 49, 78, 105, 124, 157, 178, 203, 225; 10, 29, 48, 73, 94, 118, 160; 12, 18, 50, 74, 121, 177, 236, 355, 416, 478, 505; 13, 66, 107, 127, 145, 171, 185, 218, 239, 255, 294; 14, 17, 36, 71, 117, 138, 160, 233, 287, 318, 381; 15, 48, 116, 179, 236, 355, 415, 475, 591, 711; 16, 67.
- Patents, abstracts of foreign, relating to chemistry, 1, 117, 174, 296, 404, 455, 498, 587; 2, 68, 102, 141, 191, 230, 299, 355, 375, 405, 439, 459; 3, 70, 172; 4, 38, 78, 108.
- Pea, production of nitric nitrogen by the, 20, 793: proteids of the, - - - 18, 583; 20, 348, 410
- Peas, split, adulteration of (abst.), - - - 9, 38

- Peach oil (abst.), 8, 184: kernel, proteids of the, - - - 18, 613  
 Pegmatite from Hindustan, presence of diamonds in (abst.), - - - 6, 105  
 Pelagine, composition of, - - - - - 17, 877  
 Penetration machine, the, an explanation, - - - - - 17, 218  
 Pennant grits, composition of (abst.), - - - - - 4, 144  
 Pentabrombenzenesulphonic acid (abst.), - - - - - 2, 186  
 Pentaerythrol, - - - - - 15, 706  
 Pentaglycerol, - - - - - 15, 707  
 Pentamethylbenzene, action of nitric acid on (abst.), - - - 10, 37  
 Pentathionate, potassium, experiments on (abst.), - - - 4, 224  
 Pentathionates, preparation of (abst.), - - - - - 5, 233  
 Pentathionic acid (abst.), 4, 199: note on (abst.), - - - 5, 234  
 Pentosans, determination of, in food-stuffs, 19, 193: determination of true, 19, 304: solubility of, in the reagents employed in the estimation of starch, 20, 266: of wheat, - - - - - 19, 292  
 Pentoses, not formed by assimilation process, - - - - - 15, 618  
 Pepper adulterant, new (abst.), 10, 195: adulteration and analysis (abst.), - - - - - 10, 70  
 Peppermint oil and some of its derivatives (abst.), 4, 144: plants, treatment and distillation of (abst.), - - - - - 10, 117  
 Pepsin, insoluble modification of (abst.), - - - - - 4, 237  
 Pepsin tests, relative value of, - - - - - 10, 51  
 Peptones in blood and urine (abst.), 8, 231: chemical character of, and separation from albumin (abst.), 10, 157: commercial, analysis of (abst.), - - - - - 11, 55  
 Perchloric acid, as reagent for alkaloids (abst.), - - - - - 1, 545  
 Perchromic acid, new solvents for, - - - - - 17, 41  
 Periodic function, atomic volume as a, - - - - - 20, 935  
 Periodic law, an early American arrangement of the elements, 17, 947: history of (abst.), 2, 225: modified arrangement of elements, 17, 75: see also Perissad law.  
 Periodicals, chemical, received by the American Chemical Society - 12, 510  
 Periodide of triphenylbrommethane, - - - - - 20, 790  
 Periodides, the, 17, 775: of alkaloids, 20, 706: of atropine, 20, 329: of pyridine, - - - - - 17, 859  
 Perissad law, - - - - - 12, 426  
 Permanganate, lead oxalate for standardizing (abst.), 1, 586: oxidation of quinine by, 1, 80: production of, by combustion of manganese, 18, 230: see also Potassium permanganate.  
 Permanganates, composition of the alkaline (abst.), - - - 8, 272  
 Pernitric acid, composition and molecular weight of (abst.), - 4, 237  
 Persian berries, coloring matter and glucoside sugar of (abst.), - 2, 62  
 Persulphuric acid, formation of, by electrolysis (abst.), 2, 362: heat of formation of (abst.), - - - - - 2, 363  
 Petrocene, - - - - - 1, 114  
 Petroleum, action of, on lead (abst.), 10, 92: American, hydrocarbons obtained from (abst.), 1, 384: American, hydrocarbons and higher

- alcohols obtained from (abst.), 6, 95: artificial production of, 15, 379: by-products, the nature of certain (abst.), 1, 277: crude, three samples of, 13, 179: detection of aromatic compounds in (abst.), 6, 95: determination of flashing point of (abst.), 5, 53: determination of naphtha in, P. 1, 119: and its examination, 1, 188: inclusion of, in quartz crystals, 20, 795: Lilienfein's lamp for low boiling (abst.), 6, 106: Ohio, 13, 168: Pennsylvania, - - - - - P. 1, 91
- Petroleum coke, substances contained in (abst.), 2, 435: oil, explosions of, etc., P. 1, 115: oil, testing of, P. 1, 115: tar residues, utilization of, by Rave's process (abst.), - - - - - 10, 93
- Pharmaceutical preparations made in United States, - - - - - 15, 566
- Phaselin, a proteid of the kidney bean, - - - - - 16, 707, 757
- Phaseolin, a proteid of the kidney bean, - - - - - 16, 635
- Phenacetine, identification of, - - - - - 17, 933
- Phenanthraquinone (abst.), 2, 48: action of acetyl chloride on (abst.), 4, 221: action of aldehydes on (abst.), 4, 198: action of phosphorus chlorides on (abst.), 5, 69: condensation product of, with ethyl acetoacetate (abst.), - - - - - 5, 92
- Phenanthrene, constitution of (abst.), 1, 395; 2, 45, 347: heat of solution of, - - - - - 18, 153, 156
- $\alpha$ - and  $\beta$ -Phenanthrenecarboxylic acids (abst.), - - - - - 2, 347
- Phenanthrenedisulphonic acid and some derivatives (abst.), - - - - - 2, 367
- Phenthrenesulphonic acid, a new, - - - - - 2, 203
- $\beta$ -Phenanthrolsulphonic acid, - - - - - 6, 155
- Phenetol, *p*-amido- and *p*-nitro-, note on (abst.), - - - - - 1, 485
- Phenol, action of allyl iodide on, in the presence of lime or aluminum foil (abst.), 5, 234: action of nitrogen trioxide on, 12, 9: determination of (abst.), 4, 196: determination of, in crude carbolic acid (abst.), 8, 79: determination of, in creosote oil (abst.), 6, 38: determination of, volumetric (abst.), 1, 581: dye-stuffs from (abst.), 7, 229: occurrence of, in the stem and leaves of *Pinus sylvestris* (abst.), 6, 93: oxidation of, by means of nitrobenzene (abst.), 7, 207: reagent for (abst.), 1, 339, 546: synthesis of homologues of (abst.), - - - - - 4, 205
- Phenol, *o*-amido-, a new dye-stuff from (abst.), 1, 493: *o*-amido-, triphenodioxazine by oxidation of (abst.), 12, 162: benzyl-, and its derivatives (abst.), 4, 204: *p*-brom-*o*-amido- (abst.), 7, 246: chlor-dinitro-, and an aniline derivative of  $\alpha$ -chlordinitrophenol, P. 2, 111: *o*-cyano- (abst.), 10, 38: dichlorazo-, constitution of (abst.), 1, 493: nitro-, on a, called camphonitrophenol (abst.), 12, 71: nitro-, Fittica's fourth (abst.), 2, 371: nitroso-, a few ethers of (abst.), 7, 87: perchlor-, from perchlorbenzene (abst.), 7, 228: tribromo-, brominated (abst.), - - - - - 7, 145
- Phenols, action of diazoanisole chloride on, 5, 32, 55: action of diazo- $\beta$ -naphthalene on, 6, 151: determination of, volumetric (abst.), 12, 477: high boiling, in coal tar (abst.), 7, 57, 120: polyhydric, heat

- of neutralization of (abst.), 7, 119: substituted, oxidation of (abst.), 2, 223: thermochemical relations of (abst.), - 8, 34
- Phenols, bromamido- (abst.), 7, 246: nitro-, brominated, benzyl ethers of and their behavior on reduction (abst.), 7, 245: nitroso- (abst.), 6, 287; 7, 230: nitroso-, action of ammonia on (abst.), - 7, 86
- Phenolates of amido-bases (abst.), - 5, 100
- Phenolethers, Friedel-Craft's synthesis of ketones from (abst.), - 12, 227
- Phenolglucoside, synthesis of (abst.), - 1, 403, 2, 42
- Phenolglycollic acid, preparation of (abst.), - 1, 496
- Phenolic hydrogen, substitution of bromine for (abst.), - 7, 145
- Phenosafranine (abst.), - 9, 170
- Phenoxyacetic acid (abst.), 1, 294: and derivatives (abst.), - 2, 292
- Phenoxypropionic acid (abst.), - 1, 296
- Phenyl cyanate (abst.), 7, 174: mercaptide, sodium-, behavior of, with isobutylenebromide (abst.), 12, 229: mustard oil glycolide (abst.), 2, 226: mustard oil, *m*-nitro- (abst.), - 5, 128
- Phenylacetic acid, derivatives of (abst.), - 2, 348
- Phenylacetylene, syntheses by means of (abst.), 4, 206: and its derivatives, syntheses by means of (abst.), - 4, 176
- Phenylacridine (abst.), - 6, 238
- Phenylamidopropionic acid, note on (abst.), - 1, 243
- Phenylangelic acid, formation of (abst.), - 7, 143
- Phenylarsenic acid, action of, on the animal organism (abst.), - 1, 159
- Phenylboron chloride (abst.), 2, 96: and its derivatives (abst.), - 4, 206
- Phenylbromacetic acid, action of, on ethyl acetoacetate (abst.), - 6, 85
- Phenylbromolactic acid (abst.), - 2, 366
- Phenylenediamine, action of ethyl chloracetate on (abst.), - 4, 267
- p*-Phenylenediamine (abst.), - 1, 162
- Phenylglyoxylic acid, color reactions for (abst.), - 1, 543
- Phenylhydrazine, action of benzal acetoacetic ester on (abst.), 8, 55: action of, upon the imido-ethers (abst.), - 6, 235
- Phenylisocrotonic acid, action of nitric acid on (abst.), - 7, 87
- Phenyllactic acids (abst.), - 2, 366
- Phenylmesitylenecarbinol and its principal ethers (abst.), - 8, 53
- Phenylmethacrylic acid, formation of (abst.), - 7, 143
- Phenylnitroethylene (abst.), - 7, 87
- Phenylthiocarbimide glycolide (abst.), - 2, 226
- Phloroglucin, action of chlorine on (abst.), 12, 159: isomers of (abst.), 2, 436: Weselky's reaction for, - 1, 338
- Phorone from glycerol (abst.), - 4, 176
- Phosphate, alum-, baking powders - 12, 452
- Phosphates, action of heat on, 5, 173: alkaline, behavior of, towards some indicators (abst.), 5, 53: aromatic, preparation of (abst.), 5, 18: decomposition of, by sodium acid sulphate, 7, 238; 8, 32: determination of iron and alumina in, 17, 260; natural, effect of decomposing organic matter on, 14, 353: reversion of (abst.), 2, 131, 133: reverted, determination of, 4, 113: (abst.), 4, 224: see

also Superphosphates.

- Phosphatic slags, mechanical analysis of, - - - - 19, 19
- Phosphides, metallic (abst.), - - - - 1, 168
- Phosphine, action of, on carbon bisulphide (abst.), 2, 171: combinations of, with chloral hydrate (abst.), 8, 199: combinations of, with cuprous chloride (abst.), 1, 386: determination of (abst.), 1, 386: determination of, by absorption (abst.), 1, 372: spontaneously inflammable (abst.), - - - - 12, 224
- Phosphine, diphenyl-, and triphenyl- (abst.), - - - - 5, 22
- Phosphonium chloride (abst.), 2, 88: chloride and bromide, heat of formation of (abst.), 2, 89: iodide, action of, on carbon bisulphide (abst.), - - - - 2, 171
- Phosphor-bronze, analysis of, 19, 396: manufacture of, - - - 19, 393
- Phosphor-copper, analysis of, - - - - 19, 396
- Phosphor-tin, analysis of, - - - - 19, 396
- Phosphorescence, violet, calcium sulphide with (abst.), - - 8, 199
- Phosphoric acid, existence of, in ammonium molybdate (abst.), 6, 98: glacial, detection of sodium phosphate in (abst.), 10, 66: manufacture of (abst.), 2, 434: observations concerning precipitation of, as phosphomolybdate, 17, 43: preparation of (abst.), 8, 70: reducing action of zinc on ammonium phosphomolybdate, 17, 747: reversion of (abst.), 6, 168: reversion of, by heat, 6, 229: saturation of, by bases (abst.), 4, 232: separation of, from boric acid, 19, 386: separations of, from metals (abst.), 1, 532: in soils, on (abst.), 6, 137: in soils, in northern France, amounts of (abst.), - - 4, 77
- Phosphoric acid, determination of, actual accuracy of, 18, 812: by citrate method, for small quantities, 17, 513: of citrate-soluble, as phosphomolybdate, 16, 304: comparison of methods and results, 16, 462: (abst.), 6, 241; 7, 179: in contaminated waters (abst.), 9, 174: in fertilizers (abst.), 6, 241; 7, 210: in fish guano (abst.), 1, 355: in fodders, 19, 320: as magnesium phosphate, with alkali-metric titration (abst.), 1, 281, 352: as magnesium pyrophosphate, 4, 135; 16, 289: (abst.), 1, 353, 537; 2, 220; 5, 243; 7, 178: by molybdate-magnesia method, 16, 793: (abst.), 1, 538: reverted (abst.), 1, 355; 4, 163; 7, 178: reverted, Mohr's improvements in, remarks on (abst.), 7, 179: in soils, 17, 295: (abst.), 6, 194: in superphosphates, P. 2, 64: in Thomas slags (abst.), 9, 119: by titration of phosphomolybdate with alkali (Pemberton's method), 15, 382; 16, 278; 17, 178; 18, 389; 19, 703: by titration, etc., compared with gravimetric determination, 16, 282, 765; 17, 941, 950: by titration of phosphoric acid with molybdic solution (abst.), 4, 164: by titration of phosphoric acid with uranium solution (abst.), 1, 356; 4, 164; 9, 118: in urine (abst.), 4, 196: by weighing phosphomolybdate, 18, 23: (abst.), 1, 538; 5, 52: in sweet wines (abst.), - 11, 53
- Phosphoric anhydride, apparatus for preparing (abst.), - - 9, 175
- Phosphorous anhydride, decomposition of, by sunlight (abst.), - 6, 44
- Phosphorus, attempt to find the amount of, in three samples of

- steel, 16, 217: black (abst.), 4, 272: determination of, in aluminum solders, 18, 777: in iron and steel, condition of, 16, 477: imperfectly oxidized, in urine (abst.), 6, 129: note on liquid, 20, 303: oxidation of (abst.), 6, 44: in phosphor-bronze, note on, 15, 115: reduction of carbon dioxide by, at ordinary temperatures, 1, 230: in steel, influence of heat treatment and carbon upon solubility of, 19, 786: volumetric estimation of oxygen by means of (abst.), 1, 372
- Phosphorus chloronitrides, 19, (43): chlorides, action of, on phenanthraquinone (abst.), 5, 69: iodides, molecular weight of (abst.), 4, 272: oxychloride, distinction of, from phosphorus trichloride (abst.), 12, 70: oxychloride from tricalcium phosphate (abst.), 5, 120: pentachloride, action of, on acetyl- and benzoyl-diphenylamine (abst.), 4, 264: pentachloride, action of, upon molybdenum trioxide, 16, 425: pentachloride, action of, on  $\alpha$ -naphthylsulphonic acid (abst.), 4, 228: pentasulphide (abst.), 4, 227: pentasulphide, action of, on aniline (abst.), 10, 40: pentoxide, apparatus for preparing (abst.), 9, 175: pentoxide, as a drier for gases (abst.), 10, 67: sulphides (abst.), 6, 189: trichloride, combination of, with titanium tetrachloride (abst.), 2, 434: trisulphide, new sulphur salts derived from (abst.), - - - - 6, 76
- Phosphorus, determination of, in iron ores (abst.), 6, 193: in iron ores examination of methods for, 4, 88: of insoluble, in iron ores, 19, 614: in iron and steel, (abst.), 1, 104; 9, 8: by acidimetric titration of phosphomolybdate, 19, 792: actual accuracy of, 18, 811: with ammonium molybdate and magnesia, P. 1, 167: comparison of methods, 19, 100: error in, from use of *aqua regia* in dissolving, P. 1, 2, 58: modification of molybdate method for (abst.), 6, 193; 7, 294: by molybdate-magnesia method, note on, 20, 429: precipitation of phosphomolybdate in, 18, 170: in presence of arsenic, 16, 231: proposed standard method for (Dudley's), 15, 519; 16, 224, 234, 553; 17, 129; 18, 955: note on, 15, 480: in native copper (abst.), - - - - 6, 241
- Photochemical estimation of graded tint (abst.), - - - - 10, 86
- Photographic process by means of aniline black, 8, 189: a new (abst.), 12, 476
- Photography, spectrum, in relation to quantitative analysis (abst.), 6, 243
- Photometer, chemical (abst.), - - - - 2, 173
- Photometric measurements, new unit for (abst.), - - - - 1, 373
- Phthalic acid, amidobenzoic acid derivatives of (abst.), 7, 202: action of nitrogen trioxide on, - - - - 12, 56
- Phthalic anhydride, action of, on gallic acid (abst.), 4, 244, 296: action of, on naphthalene in presence of aluminum chloride (abst.), 1, 485: action of, on quinoline (abst.), 5, 67: and xylenes, acids produced from (abst.), - - - - 5, 17
- Phthalide, action of potassium cyanide on (abst.), - - - - 7, 204
- Phthalimide, - - - - 18, 679
- iso*-Phthalophenone (abst.), - - - - 2, 131, 367
- Phthalylacetoacetate, ethyl (abst.), - - - - 5, 238



- Phthalyl chloride (abst.), 7, 57: contributions to knowledge of (abst.), 2, 371
- Physical chemistry, achievements and aims of, 16, 516: opening address before section of, World's Congress of chemists, 15, 601: problems of, - - - - - 14, 360
- Physical constants of compounds, relations between (abst.), 4, 264: of isomeric derivatives of xylene, relations of (abst.), - - - 8, 178
- Physical properties of chemical compounds (abst.), 6, 43: and chemical constitution, relations between, - - - - - 2, 118
- Physics and chemistry, borderland between (presidential address), 13, 11
- Physics and chemistry, connection between (abst.), - - - - 8, 178
- Pickles, examination of, for copper, - - - - - 2, 340
- Picoline, on commercial (abst.), - - - - - 7, 146
- Picraminic acid, action of cyanogen on (abst.), - - - - 4, 264
- Picrate, acridine (abst.), - - - - - 7, 84
- Picric acid from morphine (abst.), - - - - - 4, 76
- Picrotoxin, characteristic reactions of (abst.), - - - - 1, 339
- Picrylsulphonic acid, and its sodium salt (abst.), - - - - 7, 288
- Pilocarpine, action of acids on (abst.), 4, 236: researches on (abst.), 4, 78
- Pimelic acid, presence of, in the oxidation products of castor oil (abst.), 8, 110
- Pinacone, constitution of (abst.), - - - - - 2, 54
- Pine tree sugar, - - - - - 13, 228
- Pinus sylvestris*, occurrence of phenol in the stems and leaves of (abst.), - - - - - 6, 93
- Piperidine, contributions to knowledge of (abst.), 4, 262: observations on (abst.), 5, 131: oxidation of (abst.), 5, 133: synthesis of (abst.), - - - - 6, 162; 7, 86
- Piperidine bases, phenylated (abst.), 9, 196: bromoselenate, - - - 20, 576
- Piperine, artificial (abst.), - - - - - 5, 28
- Pipette, a new automatic, 16, 643: new overflow, 5, 218: rapid measuring, 18, 905: for weighing liquids, - - - - - 15, 190
- Plant extracts, Schlösing's ammonia estimation process for (abst.), 6, 41
- Plant fibres, analysis of some (abst.), - - - - - 5, 92
- Plant food in soils, estimation of, 20, 107: waste and conservation of (presidential address), - - - - - 16, 1
- Plant louse, honey from, - - - - - 14, 350
- Plants, cause of acidity in, 13, 215: chemical phenomena of the respiration of (abst.), 6, 232: chemical and microscopical researches on the cell contents of some (abst.), 5, 101: on the chemistry of (abst.), 6, 93: fixation of atmospheric nitrogen by (abst.), 12, 72: living, carbonates in (abst.), 8, 21: proximate analysis of (abst.), 2, 220
- Plaster of Paris method in blowpipe analysis, some extensions of the, 18, 849
- Plate towers of Lunge-Ruhrmann, - - - - - 15, 361
- Platinites, compound, and a new platinum potassium salt, - - - 1, 472
- Platinum, absorption of gases by (abst.), 4, 239: behavior of, towards carbon monoxide or hydrogen (abst.), 5, 62: filtering bulb of, 8, 17: recovery of, from residues (abst.), 1, 587: separation of, from antimony, arsenic and tin (abst.), 8, 278: separation of, from

- antimony, arsenic and tin, qualitative (abst.), 10, 156: sponge, decomposition of ammonium nitrite by means of (abst.), 12, 473: study of salts of (abst.), 8, 176: volatilization of, in chlorine gas, - - - - - 1, 479, 481
- Platinum bromide (abst.), 2, 371: chloride, preparation of pure, 12, 140: chloride, recovery of waste, 19, 258: iodide as a reagent for deleterious organic substances in potable water, 5, 74: potassium mixed double halides, 18, 130: sulphocyanate (abst.), 2, 430: sulphocyanate, a new (abst.), - - - - - 2, 363
- Platinum black, preparation of very active (abst.), 12, 154: metals, action of hydrochloric acid and oxygen upon, 15, 272: metals, explosive alloys of, with zinc (abst.), 4, 240: retort, explosion of (abst.), 2, 130: vessels, soldering and repairing of (abst.), - 7, 150
- Poisoning by carbon monoxide, 10, 176: combined arsenical and antimonial, chemical history of, - - - - - 17, 667
- Poisonous honey, - - - - - 19, (10)
- Poisons, testing for, in saliva (abst.), - - - - - 1, 402
- Polariscope, exact determination of cane-sugar by, 1, 2: illumination for, with acetylene, - - - - - 18, 179
- Polariscopic apparatus, official methods for verifying, - - - 20, 922
- Polaristrobrometric chemical analysis, - - - - - 11, 59, 80
- Polarization. See Rotation.
- Polarized light, action of oils on (abst.), 9, 176: action of solutions of cellulose on (abst.), 6, 93: for examination of the alkaloids of the quinine group, - - - - - P. 2, 57
- Polyporic acid, contributions to the knowledge of (abst.), - 1, 258
- Porcelain, Arita, raw materials used in, - - - - - 2, 315
- Porphyries, analysis of, - - - - - 12, 134
- Porpoise milk, composition of (abst.), 7, 290: fat of (abst.), - 8, 184
- Portland cement, chemical and physical examination of, - - - 15, 181; 16, 161, 283, 323, 374
- Potash bulbs, a new form of, - - - - - 18, 941
- Potash industry at Stassfurt (abst.), - - - - - 6, 24
- Potassium acid tartrate, determination of (abst.), 7, 295; 9, 120: amalgam, action of, on potassium tetra- and pentathionate (abst.), 4, 224: barium ferrocyanide, 20, 32: barium ruthenocyanide, 20, 30: bromoselenate, 20, 570: carbonate, determination of sodium compounds in (abst.), 4, 165: carbonate, Solvay process for production of (abst.), 4, 74: chlorate, action of ferric oxide on (abst.), 4, 142: chlorate, decomposition of, by heat in presence of manganese dioxide (abst.), 10, 187: chlorate, detection of nitrates in (abst.), 9, 174: chlorate, electrolysis of (abst.), 8, 19: chloride, influence of pressure and temperature in the action of, on methylamine carbonate (abst.), 9, 103: chlorobromoplatinites, 2, 196: cobaltocyanide (abst.), 1, 272: cyanide, action of, on phthalide (abst.), 7, 204: cyanide, action of, on potassium tri-chloracetate (abst.), 4, 231: cyanide, decomposition of, 6, 222:

- dichromate, titration of (abst.), 4, 165: hydrindigotin sulphate and indoxylsulphate (abst.), 2, 371: hydroxide, action of, on lead oxide (abst.), 4, 237: hydroxide, action of, on potassium tetra- and pentathionate (abst.), 4, 224: hydroxide, action of, on resin (abst.), 8, 206: hydroxide, alcoholate of (abst.), 8, 273: hydroxide, alcoholic, action of, on urea and derivatives (abst.), 8, 166: hydroxide, behavior of arsine towards (abst.), 12, 353, 477: indigo-white sulphate and indoxylsulphate (abst.), 2, 371: iodide, action of sulphuric acid on (abst.), 5, 232: iodide containing lead, behavior of, towards hydrogen sulphide (abst.), 1, 169: iodide, estimation of, in a complex organic mixture, 16, 157: iodide, quality of commercial, 16, 678: manganate, and some of its analytical uses (abst.), 9, 119: palladium bromide, 16, 466: perchlorate, electrolysis of (abst.), 8, 19: periodide (abst.), 1, 384: permanganate, action of, upon oxalic acid, P. 2, 153: permanganate, lead oxalate for standardizing (abst.), 1, 586: permanganate, methods of estimating organic matter by the reduction of (abst.), 6, 41: permanganate, oxidation of oleic acid by (abst.), 7, 207: permanganate, reaction of, with hydrogen dioxide, 11, 94: permanganate, titrations with (abst.), 7, 90: platinum mixed double halides, 18, 130: ruthenium nitrosochloride, 16, 389: ruthenocyanide, 18, 986: salts, volatility of, 19, 156: selenocyanate, action of iodine on (abst.), 6, 34: sesquicarbonate (abst.), 5, 66: silver haloid salts (abst.), 4, 235: sodium carbonate (abst.), 10, 77: sodium racemates (abst.), 8, 37: sulphate, heat of solution of (abst.), 7, 52: tetra- and pentathionate (abst.), 4, 224: trinitride, 20, 227
- Potassium, determination of, 8, 12: actual accuracy of, 18, 817: as acid tartrate, P. 1, 98: in fertilizers, 17, 46, 47: in fertilizers, oxidation of organic matter for, 17, 86: in fodders, 19, 320: in fertilizers, sources of error in methods of, 16, 364: in kainite, 17, 85: the Lindo-Gladding method, 20, 597: platinichloride, 17, 453: without previous removal of iron and calcium, 20, 340: in silicates (abst.), 1, 536: small quantities of, 2, 145: volumetric of (abst.), - 1, 333, 536
- Potato, determination of starch in (abst.), 10, 87: proteids of the, - 18, 575
- Potato, sweet, carbohydrates of (abst.), 12, 351: examination of, - 1, 526
- Pottery industry of the United States, chemistry of, - - 15, 651, 695
- Poultry, meat of, when fattened by the French process, - - 12, 44
- Powders, (smokeless) composition of, - - - 15, 1
- Powders, determination of specific gravity of (abst.), - - - 1, 395
- Praseodidymium, separation of, from iron, - - - 20, 846
- Praseodidymium molybdate, composition and solubility of, 17, 529: tungstate, composition and solubility of, - - - 17, 528
- Precipitates, determination of, without filtration, washing, and drying (abst.), 1, 84: new method of filtration and ignition of (abst.), 1, 582: separation and treatment of (abst.), - - - 2, 43
- Pressure, combustion under high (abst.), 12, 349: effect of, on crystallization and combination (abst.), 6, 38: formation of alloys by (abst.), - - - - - 4, 269

- Pressure tubes (abst.), - - - - - 10, 69
- Pressure-regulator, for distillations, etc. (abst.), - - - - - 1, 250
- Prism, compound, of great dispersive power (abst.), - - - - - 1, 172
- Prisms, colored, as colorimetric standards, - - - - - 18, 484
- Problems, chemical, of to-day (address by Victor Meyer), - - - - - 11, 101
- Proceedings of American Chemical Society, P. 1, 20, 22, 83, 113, 133, 175, 177, 209, 225: P. 1, 2, 1, 18, 47, 66, 71, 72: P. 2, 1, 13, 34, 51, 69, 82, 115, 135, 137, 138, 145: 1, 1, 6, 37, 79, 127, 183, 383, 408, 461, 507; 2, 1, 73, 107, 145, 195, 233, 361, 379, 407, 443; 3, 1, 3, 24, 32, 34, 54, 81, 95, 108, 118; 4, 1, 10, 24, 34, 57, 87, 92, 211, 243, 290; 5, 1, 31, 71, 103; 6, 1, 3, 54, 111, 146, 180, 208, 282, 302; 7, 1, 39, 71, 99, 131, 157, 187, 221, 237, 259; 8, 1, 31, 69, 115, 209, 245; 9, 1, 21, 51, 127, 161, 181, 205; 10, 31, 97, 121, 161, 175, 185; 11, 1, 29, 57, 123, 139, 153; 12, 1, 25, 53, 79, 127, 183, 247, 252, 304, 367, 423, 481, 484; 13, 6, 63, 69, 109, 133, 151, 175, 191, 196, 227, 245, 261; 14, 1, 23, 43, 81, 125, 147, 169, 239, 311, 325, 326; 15, 55, 177, 296, 598: Note, after volume 15, see Council, Meetings, Directors, etc.
- Proceedings of World's Chemical Congress, - - - - - 15, 305
- Pronunciation and spelling of chemical terms, - - - - - 14, 63
- Propanes, dibrom-, the two isomeric (abst.), - - - - - 2, 181
- Propionic acid (abst.), 8, 275: derivatives of (abst.), - - - - - 2, 135
- Propionic acid,  $\alpha$ -dibrom-, maleic and malic acids from (abst.), 2, 172:  $\alpha$ -dichlor-, preparation of dichloradipic acid from (abst.), 8, 35: dichlor-, formation of, from glyceric acid (abst.), 2, 289: dichlor-, dichloradipic acid from (abst.), 8, 36: phenoxy- (abst.), - - - - - 1, 296
- Propyl alcohol, normal, compound of calcium chloride with (abst.), 12, 156: normal, from glycerol (abst.), - - - - - 2, 94
- iso*-Propylacetylene, preparation of (abst.), - - - - - 10, 81
- Propylamine (abst.), - - - - - 12, 158
- p*-Propylbenzoic acid, synthesis of (abst.), - - - - - 5, 20
- Propylenechlorhydrin (abst.), - - - - - 7, 118
- Propylenecacetic acid, contributions to the knowledge of, - - - - - 17, 17
- Propyl- and amylnaphthalene, preparation of (abst.), - - - - - 6, 164
- Propylsuccinic acid (abst.), - - - - - 4, 270
- iso*-Propylsuccinic acid (abst.), - - - - - 4, 270
- Proteid of the adzuki bean, - - - - - 19, 509
- Proteid substances, determination of sulphur in (abst.), - - - - - 8, 60
- Proteids of the almond, 18, 610: of barley, 17, 539: of brazil-nuts, 18, 621: of the castor-bean, 18, 621: of the cocoanut, 18, 621: of cotton-seed, 16, 778: of the cow pea, 19, 494: of cow's milk, 13, 72: of cream, 20, 858: of the filbert, 18, 618: of the hazel-nut, 18, 618: of hemp seeds, 18, 621: of the horse-bean, 20, 393: of the kidney-bean, 16, 633, 703, 757: of the lentil, 20, 362, 410: of lupin seeds, 19, 454: of the maize kernel, 19, 525: of malt, 18, 542: of the pea, 20, 348, 410: of the peach seed, 18, 613: of the potato, 18, 575: of the rye kernel, 17, 429: of the soy bean, 20, 419: of squash seeds, 18, 621: of sunflower seeds, 19, 487: of the vetch, 20, 406,

- 410: of walnut seeds, 18, 616: of the wheat kernel, - - - 16, 524
- Protein compounds in milk, determination of (abst.), - - - 9, 48
- Protein, vegetable, heat of combustion of, - - - 20, 307
- Proteoses of malt, - - - - - 18, 549
- Protoplasm, living, reducing properties of (abst.), 5, 20: note upon Bütschli's experimental imitation of, - - - 12, 298
- Prussiates. See Ferrocyanide and Ferricyanide.
- Pseudocumene, nitro-, pseudocumidine, and pseudocumenol, holding the positions 1 : 3 : 4 : 5 (abst.), - - - 7, 249
- Pseudouric acid (abst.), - - - - - 1, 389
- Ptomaines, alleged reaction for (abst.), 4, 193: from fish (abst.), 7, 175: formation of, in cholera (abst.), 7, 80: found in the human cadaver (abst.), 1, 554: and leucomaines (abst.), - - - 9, 114
- Purpurin, oxidation of (abst.), - - - - - 7, 59
- Purpurins, the isomeric, chronology of, - - - - - 1, 184
- Purpurin alum solutions, effect of change of density on the absorption bands of, - - - - - 2, 362
- Putrefaction, contributions to the history of (abst.), 2, 343: of albumin, influence of carbohydrates etc. on (abst.), - - - 8, 230
- Pyknometer, a new, 3, 26: new form of, 19, 61: improved form of, - 19, 111
- Pyrazole, synthesis of (abst.), - - - - - 12, 233
- m*-Pyrazolones of Pinner and Lifschutz (abst.), - - - 10, 82
- Pyridine, action of bromine on (abst.), 4, 242: nicotinic acid from (abst.), - - - - - 4, 176
- Pyridine alkyl hydroxides, 18, 247: alkyl iodides, notes on some, 18, 91: bromoselenate, 20, 575: carboxylic acids (abst.), 2, 96; 6, 287: ethyl iodide, 18, 92: halides and perhalides, 19, 558: isopropyl hydroxide, 18, 249: isopropyl iodide, 18, 93: methyl iodide, 18, 91: periodides, 17, 859; 19, 322: propyl hydroxide, 18, 248: propyl iodide, - - - - - 18, 92
- Pyridine bases (abst.), 2, 89: bases, action of ethylene chlorhydrin on (abst.), 4, 272: compounds obtained by condensation (abst.), 6, 83: derivatives (abst.), 6, 83: derivatives, formation of, from malic acid (abst.), 7, 117: series, isomerism in (abst.), 6, 83: series, synthesis of alcohols in (abst.), - - - 12, 160
- Pyridine and piperidine, observations on (abst.), 5, 131: and piperidine bases, phenylated (abst.), 9, 196: and quinoline series, detection and determination of the bases of (abst.), - - - 7, 292
- Pyridinetricarboxylic acid from the alkaloids of the quinine group (abst.), - - - - - 2, 172
- Pyrite from York, Pa., - - - - - 15, 543
- Pyrites, composition of gaseous products in the combustion of (abst.), 7, 124: determination of arsenic in (abst.), 10, 66: determination of sulphur in, 16, 398; 17, 181, 397, 772; 18, 446, 685: (abst.), 4, 161: iron, synthesis of (abst.), - - - - - 12, 155
- Pyrocinchonic acid, preparation of, from  $\alpha$ -dichlorpropionic acid (abst.), - - - - - 8, 35

- Pyrocoll, synthesis of (abst.), - - - - - 6, 86
- Pyrocresols, three isomeric (abst.), - - - - - 9, 195
- Pyrogallol, antiseptic qualities of (abst.), 1, 497: chlorination of (abst.), 6, 238: oxidation of, in presence of gum arabic (abst.), 4, 237
- Pyrogalloltriglycollic acid (abst.), - - - - - 1, 496
- Pyromeconic acid (abst.), - - - - - 1, 294, 490
- Pyrophosphates, double, use of, in electrolytic separations (abst.), 12, 168
- Pyroracemic acid (abst.), - - - - - 2, 53
- Pyrosulphuryl chloride, preparation of (abst.), 5, 126: vapor density of (abst.), - - - - - 4, 78
- Pyrotartaric acid, behavior of, with bromine (abst.), - - - 6, 308
- Pyroxylin, chemical composition of (abst.), 2, 173: denitration of, 112: heat of formation of (abst.), 2, 435: manufacture and applications of, - - - - - 15, 140; 16, 487, 543
- Pyrrhotite from Clayton, New York, analysis of, 4, 214: determination of, in pyrites, 18, 404: nickeliferous, constitution of, - 14, 369
- Pyrrrol, action of acetic anhydride and benzoic anhydride on (abst.), 7, 84: action of cyanogen chloride on potassium compound of (abst.), 5, 64: blue dye-stuff from (abst.), - - - 6, 161
- Qualitative analysis, application of diphenylamine and aniline in (abst.), 5, 52: use of sodium peroxide in, - - - - - 19, 341
- Quantitative analysis, notes on, 12, 131: spectrum photography in relation to (abst.), - - - - - 6, 243
- Quantitative work for beginners in chemistry, - - - - - 16, 59
- Quartz, estimation of, in rocks and clays (abst.), 6, 239: petroleum inclusion in crystals of, - - - - - 20, 795
- Quercitrin and quercitin, identity of a coloring matter with (abst.), 4, 206
- Quicklime, determination of calcium oxide in, 16, 721: technical valuation of (abst.), - - - - - 1, 559
- Quinamine (abst.), - - - - - 2, 176
- p*-Quinanisoil, derivatives of (abst.), - - - - - 7, 84
- Quinazole compounds (abst.), - - - - - 5, 238
- Quinine, estimation of, in quinine tannate (abst.), 12, 120: modification of the thalleoquin test for, 19, 331: oxidation of, by potassium permanganate, 1, 80, 169: oxidation products of (abst.), 1, 395: synthesis of (abst.), - - - - - 4, 236
- Quinine group, polarized light for examination of the alkaloids of P. 2, 57
- Quinine sulphate, analysis of commercial (abst.), 7, 226: detection of cinchonidine in (abst.), 8, 233: identification of - - - 17, 933
- Quinol, action of sulphuric acid on, and value of product as a developer, 13, 155: some derivatives of (abst.), 1, 161: sulphonic acids of (abst.), - - - - - 5, 239
- Quinolsulphonic acid, value of, as a developer, - - - - - 13, 155
- Quinoline, action of bromine on (abst.), 4, 242: action on chloroform and iodoform (abst.), 5, 66: action of ethylene chlorhydrin on (abst.), 4, 272: action of phthalic anhydride on (abst.), 5, 67: ammonium bases derived from (abst.), 7, 119: bases produced from

- addition products of, with haloid ethereal salts (abst.), 4, 265; 5, 23: on the constitution of (abst.), 5, 61: derivatives of, (abst.), 5, 25, 52: halogen derivatives of (abst.), 4, 268: a homologue of (abst.), 7, 145: and lutidine (abst.), 4, 272: some substitution products of, 7, 222: synthesis of homologues of (abst.), - - - 2, 170
- Quinoline, *m*-chlor-, derivatives of (abst.), 7, 229: *p*-dibrom- (abst.), 6, 236: diiodo- (abst.), 5, 24:  $\alpha$ -hydroxy- (abst.), 5, 19: tetrabrom- (abst.), - - - - - 5, 24
- Quinoline ring, formation of (abst.), - - - - - 12, 234
- Quinoline and pyridine series, detection and determination of the bases of (abst.), - - - - - 7, 292
- $\beta$ -Quinolinedisulphonic acid (abst.), - - - - - 10, 21
- p*-Quinolinesulphonic acid (abst.), - - - - - 6, 236
- Quinone, action of amines on (abst.), - - - - - 8, 23
- Quinones, action of acid chlorides and bromides on (abst.), 5, 19: action of amines on (abst.), 4, 226, 265: reaction used to determine constitution of (abst.), - - - - - 4, 199
- p*-Quinonedicarboxylic ester, derivatives of (abst.), - - - - - 9, 213
- Quinoneoxime, new, - - - - - 13, 111
- Quinoxaline (abst.), - - - - - 6, 308
- Racemates, sodium and potassium (abst.), - - - - - 8, 37
- Racemic acid (paratartaric acid), relative solubilities of dextro- and levo-components of salts of (abst.), - - - - - 6, 90
- Raffinose, occurrence of, in American sugar beets, - - - - - 19, 116
- Rain-water, action of impure, on lead pipes, - - - - - P. 1, 66
- Rain-waters, tropical, proportions of chlorine and nitrogen in - - - - - 19, 1
- Raphides, cause of acidity in plants, - - - - - 13, 215
- Rape-seed cake, detection of foreign seeds in (abst.), - - - - - 4, 193
- Reaction, velocity of, between ferrous chloride, potassium chlorate, etc., - - - - - 19, 199
- Reactions, velocity of (abst.), - - - - - 2, 368
- Reagent bottles (abst.), - - - - - 7, 173, 209
- Reagents, concentration of (abst.), 12, 175: dilution of, by formula, 19, 587: sensitive to light, bottles for (abst.), - - - - - 7, 209
- Red lead, variations in the composition of, - - - - - 19, 339
- Reducing agents, metallic, contributions to our knowledge of, - - - - - 16, 833
- Reducing properties of living cells (abst.), - - - - - 4, 176
- Reduction of ferric alum by sugar, speed of, 19, 683: of metallic oxides at high temperatures, - - - - - 20, 232
- Refraction and heat of combustion (abst.), - - - - - 4, 176
- Refraction, molecular, of terpenes (abst.), - - - - - 4, 173
- Refractometer, as a means of testing butter (abst.), - - - - - 9, 14
- Regulator, automatic, for evaporation and distillation (abst.), 1, 584: for gas pressure, - - - - - 20, 501
- Reinsch's test for arsenic and antimony, - - - - - 18, 953
- Rennet, active principle of, - - - - - 10, 98
- Research, relation of, to teaching, - - - - - 15, 665

- Researches on explosives, observations on Noble and Abel's (abst.), 1, 401  
 Resin, action of alcoholic potassium hydroxide on (abst.), 8, 206: estimation of, in soaps (abst.), 8, 62: fir, delicate reaction for (abst.), 10, 195: from rose-wood (abst.), - - - - 2, 431  
 Resin oil, capronic acid occurring in (abst.), 4, 228: spirit, constituents of (abst.), - - - - 4, 200  
 Resins and gums, chemical examination of (abst.), - - - 10, 157  
 Resins, new method of analyzing, 16, 275: studies upon - 12, 285, 392  
 Resistance of electrolytes, method for determining - - - 20, 206  
 Resorcinol, action of acetaldehyde on (abst.), 9, 34: heat of solution of, 18, 152, 154: nitro derivatives of (abst.), 5, 129: and thymol, reactions of (abst.), - - - - 12, 502  
 Resorcinol, diethoxy-, action of nitrous acid on (abst.), - - - 1, 161  
 Resorcinol dye-stuffs (abst.), - - - - 4, 268  
 Resorcinoldiethyl ether, action of nitrous acid on (abst.), - - - 1, 161  
 Respiration, chemical phenomena of, in a super-oxygenated atmosphere (abst.), 6, 129: of plants, chemical phenomena of (abst.), 6, 232  
 Respiration calorimeter, description of a, - - - - 20, 681  
 Retene, constitution of (abst.), - - - - 7, 227  
 Reversion of phosphates and phosphoric acid. See Phosphates and Phosphoric acid.  
 Rhabdophane, analysis of (abst.), - - - - 4, 203  
 Rhamnose, fucose, an isomer of (abst.), - - - - 12, 476  
 Rhode Island Section, meetings of, 17, (28), (32), (46), (62), (65); 18, (33), (64), (68), (99), (120), (125); 19, (20), (22), (42), (50); 20, (4), (25), (33), (83).  
 Rhodium, color reaction of (abst.), 8, 58: constitution of some double salts of (abst.), 12, 472: three new compounds of (abst.), - 7, 283  
 Rider, apparatus for moving (abst.), - - - - 1, 586  
 Riders, safety attachment for, - - - - 16, 764  
 Roccelin (sodium oxyazonaphthalenesulphonate), - - - 1, 180  
 Rock analysis, plea for completeness in, - - - - 16, 90  
 Rock salt, association of hydrocarbons with, in nature (abst.), 10, 75: from Saltville, Va., analysis of, - - - - 4, 255  
 Root tubercles in water culture, - - - - 20, 9  
 Rosaniline, constitution of, note upon (abst.), 1, 271: examination of wines for compounds of (abst.), 8, 57: formation of a blue dye-stuff from (abst.), 6, 287: salts of, constitution of (abst.), - 2, 366, 431  
 Rosanilines, homologous and isomeric (abst.), 4, 237: probable number of homologous and isomeric (abst.), - - - - 6, 191  
 Rosin, determination of, in fats (abst.), 4, 192: determination of, in soaps and fats (abst.), 8, 205: the iodine figure of, - - - 16, 56  
 Rosin oil, detection of, in lard (abst.), 4, 192: separation of, from mineral oil, - - - - 16, 385  
 Rosolene (abst.), - - - - 8, 56  
 Rotation, determination of, of levorotary solutions, 5, 104: of plane of polarization, relations between amounts of (abst.), - - - 4, 173



- Rotary polarization under magnetic influence (abst.), - - - 4, 257  
 Rotary power, molecular, synthesis of compounds possessing (abst.), 6, 74  
 Rouge Français (abst.), - - - - - 2, 226  
 Rubber, vulcanized, analysis of (abst.), - - - - - 7, 178  
 Rubber goods, estimation of mineral matter in, - - - - 19, 952  
 Rubidium, atomic weight of (abst.), - - - - - 1, 106  
 Rubidium bromoselenate, 20, 570: columbium fluoride, 18, 58: fluo-  
 ride, 18, 57: ruthenium nitrosochloride, 16, 395: tantalum fluoride,  
 18, 58: trinitride, - - - - - 20, 227  
 Rubijervine, chemistry of (abst.), - - - - - 1, 554  
 Russian Chemical Society, report of papers of (abst.), - - -  
 - - - - - 6, 77, 95, 128, 135, 157, 167  
 Ruthenium, electrolytic determination of, 17, 652: and its nitrosochlor-  
 rides, - - - - - 16, 388  
 Ruthenocyanides, contributions to the knowledge of, 18, 981: some  
 new, - - - - - 20, 29  
 Rye kernel, the proteids of, - - - - - 17, 429  
 Sabadilla, alkaloids of, - - - - - 14, 226  
 Saccharate, antimonyl potassium (abst.), - - - - - 6, 35  
 Saccharic acid and mucic acid, derivatives of (abst.), - - - 10, 17  
 Saccharimeter, new (abst.), 1, 92: for sugar analysis, - - - 16, 677  
 Saccharimetric tests, table for correction of, - - - - - 3, 89  
 Saccharin, on (abst.), 5, 20; 9, 34; 9, 217: detection of (abst.), 9, 201; 10, 88  
 Saffranine, formation of substituted (abst.), 10, 22: new mode of forma-  
 tion of (abst.), 10, 22: spectra of salts of (abst.), - - - 1, 374  
 Salicylic acid, amount of, in the cultivated pansy (abst.), 6, 233: anti-  
 septic properties of (abst.), 4, 238: colorimetric estimation of  
 (abst.), 4, 189; 9, 15: curve of solubility of (abst.), 1, 272; detec-  
 tion of, 1, 294, 578; 8, 278; 9, 15; 16, 198: determination of (abst.),  
 5, 118: reaction for iron, delicacy of (abst.), 1, 335: solubility of  
 (abst.), - - - - - 1, 272; 2, 88  
 Salicylic acid, *m*-chlor-, products of nitration of (abst.), 1, 288; 2, 94:  
*p*-hydroxy- (2:5-dihydroxybenzoic acid) (abst.), - - - 1, 495  
 Salicylic acids, iodo-, and dihydroxybenzoic acids (abst.), 5, 29, 59:  
 nitro-, and isomerisms of benzene derivatives (abst.), - - - 1, 233  
 Saliva, action of, on starch and glycogen (abst.), 1, 173, 273: patho-  
 logical and poisonous substances detected in (abst.), - - - 1, 402  
 Salol, study of (abst.), - - - - - 9, 197  
 Salt industry of the Tees (abst.), - - - - - 10, 159  
 Salt solutions, decomposition of, by animal charcoal (abst.), 1, 95: elec-  
 trical conductivity of dilute (abst.), 6, 125: molecular volume of  
 (abst.), - - - - - 6, 48  
 Salts, boiling points of solutions of (abst.), 9, 109: combination of water  
 with (abst.), 8, 179: decomposition of, by water (abst.), 7, 140:  
 double, crystallization of (abst.), 4, 261: double decomposition of  
 (abst.), 6, 128: double, prepared by fusion (abst.), 4, 239: heat of  
 hydration of (abst.), 6, 189: hydrated, relations of volumes of so-

- lutions to water of composition (abst.), 1, 392: isomorphous, and fractional crystallization, 6, 408: metallic, reactions of dipropylamine with (abst.), 8, 201: solubility of some, in fused sodium nitrate (abst.), 7, 53: solubility of, in water (abst.), 7, 27: volatility of certain inorganic, - - - - - 19, 155
- Samarium and its compounds (abst.), 5, 234: researches upon (abst.), 1, 401
- Samaraskite, study of earth-metals contained in (abst.), - - - 4, 222
- Sampling bar copper, rational mode of, 19, 243: by quartation, experiments on, - - - - - 15, 260
- Sampling and analyzing commercial products, standard methods of (abst.), 6, 200: and testing, international methods of (abst.), - 6, 32
- Sam-shu*, a Chinese liquor, analysis of, - - - - - 7, 243
- Sandal-wood, the coloring matter of (abst.), - - - - - 1, 158
- Saponification, velocity of (abst.), - - - - - 8, 83
- Sausages, determination of starch in (abst.), - - - - - 1, 571
- Scale prevention, treatment of boiler water for, - - - - - 15, 610
- Scale-pans of mica, - - - - - P. 1, 126
- Scandium, occurrence of (abst.), - - - - - 1, 389
- Scapolites, presence of chlorine in (abst.), - - - - - 1, 391
- Schistose structure in compressed bodies (abst.), - - - - - 6, 38
- Schulze-Tiemann method for determining nitric acid (abst.), - 12, 353
- Science in America (presidential address), - - - - - P. 1, 135
- Sea weed, fucose from, an isomer of rhamnose (abst.), - - - 12, 476
- Sealed tubes, apparatus for heating, - - - - - 13, 182
- Sebacic acid, amidobenzoic derivatives of (abst.), 7, 202: bromine substitution products of (abst.), 4, 204: oxidation of (abst.), 8, 28, 56, 87
- Sebacic and suberic acids, formation of, from crude fatty acids (abst.), 4, 233
- Selenates, crystallized (abst.), - - - - - 10, 76
- Selenium, derivatives of, 20, 555: determination of atomic weight of 20, 555: and tellurium, notes on, 19, 771: and tellurium, separation of, and preparation of, from lead chamber deposit (abst.), 6, 47
- Selenium dioxide, pure, preparation of, 20, 559: double bromides, 20, 568: halogen compounds of (abst.), 6, 76: monoxide, 20, 577: tetrachloride, combination of auric chloride with (abst.), - 8, 20
- Selenocyanates, alkaline, action of non-metals on (abst.), - - 8, 179
- Selenocyanogen and sulphocyanogen compounds (abst.), - - 12, 231
- Serpentine of Venayes (Vallée d'Aoste) analysis of (abst.), - 1, 275
- Sewage disposal at Worcester, Mass., 16, 682: purification, recent work in England on, 20, 185: sludge, disposal of (abst.), - - 6, 103
- Silica, determination of, in blast furnace slag, 16, 501; 19, 370: ultramarine blue from (abst.), - - - - - 7, 172
- Silica and alumina in pure wheat, relation between amounts of (abst.), 1, 110: and silicates, action of hydrofluoric acid on, - 8, 210
- Silicates, decomposition of, by means of litharge (abst.), 1, 334: determination of ferrous oxide in (abst.), 1, 85: determination of potassium and sodium in (abst.), 1, 536; 6, 312: fractional analysis of, 13, 277: fusibility of, 12, 200, 307: insoluble, analysis of, 12, 134:

- natural, alkaline reaction of, - - - - - 20, 739
- Silicic acid, separation of, from tungstic acid, note on, - - - 19, 377
- Silicic acid, ortho-, existence of, - - - - - 19, 832
- Silicides of iron, - - - - - 17, 923
- Silico-molybdic acid (abst.), - - - - - 4, 77
- Silicon (abst.), 4, 240: action of carbon disulphide on (abst.), 4, 240:  
and carbon, new compounds of (abst.), 4, 237: carbide, 15, 411:  
determination of, in aluminum, 18, 768: determination of, in  
blast furnace slag, 19, 370: determination of, in iron and steel  
(abst.), 1, 104, 285, 371, 562; 4, 165: determination of, in pig-iron  
and steel, 19, 105: influence of, upon heat of solution of cast irons,  
20, 690: influence of, on the properties of iron and steel (abst.),  
10, 159: rapid method for determination of (in iron-manganese  
alloys), 19, 138: in steel, note on Drown's method of determin-  
ing, - - - - - 20, 547
- Silicon tetrachloride, derivatives of, - - - - - 20, 13
- Silk, raw, influence of composition of water in production of (abst.), 1, 159
- Silk, cotton and wool, absorption of weak reagents by (abst.), - 5, 98
- Silver, alloys of, with aluminum, 16, 485: ammoniacal alkaline solu-  
tion of, as a reagent for aldehyde (abst.), 5, 50: atomic weight of,  
19, 361; 20, 164: atomic weight of, electrolytic determination of,  
18, 990: detection of, in metallic lead (abst.), 4, 168: determina-  
tion of, in alloys (abst.), 1, 99: determination of, in copper, ac-  
tual accuracy of, 18, 816: determination of, in galena (abst.), 1,  
562: determination of, in lead, cause of discrepancies in, P. 1, 67:  
determination of, Volhard's method for (abst.), 1, 535: electrolysis  
of pyrophosphate of (abst.), 12, 171: flame reactions of, P. 1, 2,  
33: a form of, obtained by reduction of silver sulphide, 16, 700:  
metallic, presence of oxygen in (abst.), 1, 527: method of tough-  
ening, in the melting crucible, 6, 182, 210: oxidation of, 18, 254:  
(abst.), 9, 169: separation of, from arsenic by hydrobromic acid  
gas, 20, 806: separation of, from arsenic by means of hydrochloric  
acid gas, 18, 1039: separation of, from cadmium, 16, 424: separa-  
tion of, from copper, 16, 420: separation of, from lead (electro-  
lytic), - - - - - 15, 102
- Silver ammonium compounds, history of (abst.), 6, 73: ammonium  
oxide in solution, 2, 32: bromide, sensitiveness of, to light (abst.),  
6, 128: chloride, bromide, and iodide, blow-pipe experiments upon,  
P. 2, 74: cyanide, action of sulphur chloride on (abst.), 7, 201:  
cyanide, identification of minute quantities of (abst.), 5, 245: ha-  
loid salts, behavior of, towards bromine and iodine (abst.), 5, 245:  
iodide as a blow-pipe reagent, 7, 132: fulminate, decomposition of,  
by hydrochloric acid (abst.), 6, 90: fulminate, Liebig's produc-  
tion of, without nitric acid (abst.), 6, 46: nitrate, combination of,  
with the alkaline nitrates (abst.), 8, 50: nitrate, action of sulphur  
oxychlorides on (abst.), 4, 223: nitrate, action of thiophosphoryl  
chloride on (abst.), 4, 224: nitrate, alcoholic; a reagent for acetyl-

- ene hydrocarbons (abst.), 10, 87: and potassium, haloid salts of (abst.), 4, 235: salts of fatty acids, products of dry distillation of (abst.), 8, 64: salts, action of molybdenum dioxide upon, 16, 569: selenite, preparation of, 20, 560: sulphide, refining of, 18, 643: ul-tramarine, some reactions of (abst.), - - - - 1, 163
- Silver assay, commercial, accuracy of, 16, 505: loss of silver in, 16, 313: modified method of, - - - - 19, 814
- Silver ores, reduction of, by hydrogen, in the wet way (abst.), 4, 241: voltmeter, use of Gooch crucible as, - - - - 12, 300
- Sinapic acid (abst.), - - - - 6, 167
- Siphon, automatic filtering, - - - - 19, 817
- Skatole, constitution of (abst.), 2, 368: empirical formula of (abst.), 2, 137
- Slag, determination of silicon in, 19, 370: from ignited garbage, analysis of, 6, 188: Thomas, adulteration of (abst.), - - - - 12, 413
- Slags, basic phosphatic, mechanical analysis of, 19, 19: blast furnace, and the fusibility of silicates, 12, 189, 307: blast furnace, calculation of, 12, 443: Thomas (abst.), 9, 118: Thomas, method for determining phosphoric acid in (abst.), - - - - 9, 119
- Slate, composition of (abst.), - - - - 2, 131
- Smelting furnace of the United States mint, - - - - 7, 159
- Smokeless powder, the development of (review), - - - - 18, 819
- Snow water, examination of, - - - - 6, 187
- Soap analysis, 5, 44: (abst.), - - - - 7, 179
- Soap, dissociation of, by water, 12, 48: new antiseptic (abst.), 10, 92: powdered, examination of (abst.), 8, 233: preparation of (abst.), 8, 206: preparation of, from suint and fuller's grease (abst.), 8, 87: solutions of, action of sodium chloride on (abst.), - - - - 8, 104
- Soaps (abst.), 8, 43: estimation of glycerol in (abst.), 10, 182: estimation of resin in (abst.), 8, 62: preparation of soluble magnesia (abst.), 8, 64: and fats, determination of rosin in (abst.), - - - - 8, 205
- Soap bubbles, opaque, for gas experiments, - - - - 12, 49
- Soda industry (abst.), - - - - 6, 174
- Soda, loss of, by formation of Gay-Lussite (abst.), 4, 74: process, ammonia, influence of, on the value of hydrochloric acid and chlorine (abst.), 6, 174: new processes for producing, study of reactions for (abst.), - - - - 4, 75
- Soda industries in United States, - - - - 15, 565
- Soda liquors, Gay-Lussite in, 4, 73: vanadium compounds from (abst.), 4, 73
- Soda lyes, oxidation of (abst.), - - - - 4, 73
- Sodium, action of, on lupinin (abst.), 5, 17: compounds, determination of, in potassium carbonate (abst.), 4, 165: determination of, in aluminum, 18, 770: note on the spectrum of (abst.), 1, 373: and potassium, determination of, in silicates (abst.), 1, 536: vapor density of, experiments on (abst.), - - - - 2, 371
- Sodium acetate, estimation of, in a complex organic mixture, 16, 157: acid carbonate, preparation of (abst.), 6, 173: acid sulphate, decomposition of phosphates by, 7, 238; 8, 32: acid sulphite, thermo-

- chemical investigation of (abst.), 6, 189: bromate, use of, in volumetric analysis (abst.), 7, 296: bromoselenate, 20, 570: carbonate, action of, on feldspars, etc. (abst.), 4, 199: carbonate, precipitation of alums by (abst.), 4, 258: chloride, action of, on solutions of soap (abst.), 8, 104: chloride, coloration of coal fire by (abst.), 10, 179: chloride, fibrous, P. 2, 141: chloride solutions, specific gravity of, 20, 621: ferrate, production of, 17, 763: fluorides (abst.), 6, 74: fluoride, volatility of, 16, 418: fulminate (abst.), 7, 201: glycerolate (abst.), 8, 184: hydroxide, action of, in expelling ammonia from salts and amines (abst.), 6, 27: hydroxide, action of, on feldspars, etc. (abst.), 4, 199: hydroxide, the Le Sueur process for production of, 20, 868: hydroxide, oxidation of sulphur compounds occurring in the manufacture of (abst.), 6, 28: hydroxide, preparation of standard solution of, 1, 525: nitrate, decomposition of, by sulphuric acid, 13, 246: nitrate, formation of deposits of (abst.), 8, 70: nitrate, fused, solubility of certain salts in (abst.), 7, 53: nitrite, qualitative separations with, 19, 434: nitroprusside, preparation of, 19, 23: palladium bromide, 16, 467: peroxide as an iron group reagent in qualitative analysis, 19, 341: peroxide in quantitative analysis, 20, 130: phosphate, detection of, in glacial phosphoric acid (abst.), 10, 66: potassium double carbonate (abst.), 10, 77: potassium racemates (abst.), 8, 37: racemates (abst.), 8, 37: salts, volatility of, 19, 156: sulphate, anhydrous, heat evolved on mixing of, with water (abst.), 1, 395: sulphate, modifications of (abst.), 7, 28: sulphite and acid sulphite, thermochemical investigation of (abst.), 6, 189: trinitride, 20, 226: vanadate, action of hydrochloric acid gas upon, - - - 16, 578
- Sodium flame, lamp for, - - - - - 15, 121
- Sodium glyoxal acid sulphite, thermochemical examination of (abst.), - - - - - 6, 189
- Soil, analysis of, changes in official methods of, 16, 792: effects of salts and fertilizers on moisture of, 19, 620: rich in organic matter, germination in (abst.), 7, 25: vegetable, nitrogenous principles of (abst.), - - - - - 9, 104
- Soils, acidity in, relative sensibility of plants to, 20, 103: action of organic and mineral acids upon, 17, 148: analysis of (abst.), 6, 168: apparatus for determination of water-holding power of, 17, 769: argillaceous, fixation of atmospheric nitrogen by (abst.), 8, 18: chemical and physical investigation of, 16, 34: determination of ammoniacal nitrogen in (abst.), 6, 169: determination of nitric acid in (abst.), 4, 258: determination of phosphoric acid in (abst.), 6, 194: determination, dissemination, etc., of phosphoric acid in (abst.), 6, 137: emission of ammonia by (abst.), 10, 12: fixation of atmospheric nitrogen by (abst.), 10, 12: in northern France, phosphoric acid in (abst.), 4, 77: reduction of nitrates in (abst.), 5, 117
- Solanine and its decomposition products (abst.), - - - - - 1, 255
- Solder for aluminum, - - - - - 16, 881

- Solid state, numerical laws of (abst.), - - - - - 6, 73
- Solidification (abst.), - - - - - 7, 244
- Solubility of chlorides in presence of hydrochloric acid (abst.), 8, 163:  
 effect in case of tri-ionic salts, investigation of the theory of, 20,  
 194: of salts in water (abst.), 7, 27: of salts of weak acids in  
 stronger acids, 20, 742: of weak acids in solutions of salts of other  
 acids, - - - - - 20, 751
- Solubilities, apparatus for determining, 16, 715: improved apparatus  
 for determination of (abst.), - - - - - 1, 375
- Solution, apparatus for effecting, 19, 286: connection between pseudo  
 and true (abst.), 6, 286: of solid substances in their own solutions,  
 rate of, - - - - - 19, 930
- Solutions, boiling-points of (abst.), 9, 109: constitution of (abst.), 12,  
 351: formulæ for mixing (abst.), 6, 43: salt, volume alterations  
 attending the mixture of (abst.), - - - - - 5, 97
- Solvay process, improvement in (abst.), 4, 74: for production of potas-  
 sium carbonate (abst.), - - - - - 4, 74
- Sorbic and hydrosorbic acids, structural formula of (abst.), - - - 2, 173
- Sorbus tree, tannic acid contained in the berry of (abst.), - - - 9, 101
- Sorghum, Minnesota, examination of, - - - - - 1, 44
- Sorghum cane, analysis of, 3, 151: juice, predominant organic acid  
 in, - - - - - 15, 144
- Sorghums, development of sugar in, - - - - - 2, 75
- Soxhlet's extractor, modified form of, - - - - - 9, 182
- Soy bean, proteids of the, - - - - - 20, 419
- Spattering, loss by, device to prevent, - - - - - 20, 233
- Specific gravity bottle. See Pyknometer.
- Specific gravity of fat at 100°, etc. (abst.), 10, 157: of liquids, deter-  
 mination of (abst.), 2, 171: of powdered bodies, determination of  
 (abst.), 1, 395: tables, collection of (abst.), - - - - - 10, 159
- Specific volumes, etc., of esters of fatty acids (abst.), - - - - - 8, 228
- Specimen bottle, - - - - - 18, 412
- Spectra, absorption, of the alkaloids (abst.), 6, 309: absorption, of car-  
 bon compounds, relation of, to molecular structure (abst.), 4, 144:  
 of azo colors, 6, 117, 149: of gases, influence of pressure and tem-  
 perature on (abst.), 1, 93: homologous (abst.), 5, 236: regulator  
 for projection of, by electric light (abst.), 7, 141: of solutions, dis-  
 charger for, 20, 1: ultra-violet, photographs of (abst.), - - - 4, 169
- Spectral analysis, quantitative (abst.), - - - - - 1, 84
- Spectrophotometer, new form of (abst.), - - - - - 1, 583
- Spectroscope, support for (abst.), 1, 379, 397: Thollon's, note on  
 (abst.), - - - - - 1, 172
- Spectroscopes, new compound prism for (abst.), - - - - - 1, 172
- Spectroscopic examination of Lauth's violet and methylene blue, 6,  
 304: of pure indigo (abst.), 6, 97: of vapors obtained on heating  
 iron and other metals (abst.), - - - - - 6, 232
- Spectrum, absorption, of bromine and iodine monochloride (abst.), 1,

- 95: absorption, of different liquids (abst.), 1, 94: of beryllium (abst.), - - - - - 5, 115
- Spectrum analysis, quantitative, contributions to (abst.), - - - 1, 374
- Spectrum photography in relation to quantitative analysis (abst.), 6, 243
- Speed of dissociation of brass (abst.), - - - - - 6, 75
- Spelling and pronunciation of chemical terms, - - - - - 14, 63
- Spermatic fluid, detection of (abst.), - - - - - 1, 557
- Spices, determination of purity of (abst.), 1, 570: examination of (abst.), - - - - - 10, 70
- Spiegel. See Iron.
- Spinel, artificial production of (abst.), - - - - - 9, 168
- Stachyose, saccharide from *Stachys tuberosa* (abst.), - - - 12, 352
- Stand, new laboratory, - - - - - 13, 102
- Standard solutions, dropping flask for, - - - - - 16, 156
- Stannic chloride, action of, on acetic acid and acetic anhydride (abst.), 2, 363: chloride, action of water on (abst.), 12, 71: oxide, separation of, from tungstic acid (abst.), - - - - - 9, 200
- Stannous chloride, action of iodine on, 19, 515: chloride, speed of reduction of ferric chloride by, 16, 314: iodide, solubility of, in water and in hydriodic acid, 19, 845: oxide, action of acid solutions on (abst.), 4, 234: oxide, action of alkaline solution on (abst.), 4, 235: salts, titration of, with iodine, - - - - - 19, 809
- Starch, action of diastase, saliva, and pancreatic juice on (abst.), 1, 173, 273: action of diastase and sulphuric acid on (abst.), 1, 101: determination of water in (abst.), 6, 137: equivalent to copper, Wein's table of, recalculation of, 19, 452: hydrolysis of, by acids, 19, 261, 679: hydrolysis of, by acids, investigation of, 18, 869: processes used in manufacture of, 17, 68: table of analyses of commercial, 14, 316: transformation of, into glucose by cold water (abst.), - - - - - 1, 271
- Starch, determination of (abst.), 6, 44: quick, 17, 64: with ammoniacal copper solution (abst.), 1, 547: comparison of methods for, 16, 726; 20, 253: in food-stuffs, 19, 192: and formula of (abst.), 1, 546: method for (abst.), 9, 36, 46: in the potato (abst.), 10, 87: in sausages (abst.), 1, 571: in wheat, - - - - - 19, 302
- Starch iodide (abst.), - - - - - 10, 188
- Starch products, estimation of carbohydrates in, - - - - - 19, 698
- Starch sugar, detection of, in cane sugar, 2, 111, 428: syrup, detection of, in sugar-house molasses, - - - - - 3, 87
- Stas memorial, - - - - - 18, 201
- Stassfurt industry, progress of (abst.), - - - - - 4, 75; 6, 24
- Staurotide, analysis of (abst.), - - - - - 7, 294
- Steam, fractional distillation in a current of (abst.), - - - 7, 33, 251
- Stearic acid, determination of, in fats, 19, 32: separation of, from oleic acid (abst.), - - - - - 1, 360
- Stearin, beef, test for, in lard (abst.), - - - - - 10, 182
- Steel, on the condition in which carbon exists in (abst.), 5, 114: effects

- of compression on hardness of (abst.), 4, 235: gases enclosed in (abst.), 1, 165: gases occluded in (abst.), 6, 172: influence of heat treatment and carbon upon the solubility of phosphorus in, 19, 786: influence of silicon on the properties of (abst.), 10, 159: relation between chemical composition and mechanical properties of (abst.), 1, 278: separation of carbon from, new mixture for (abst.), - - - - - 10, 156
- Steel, determination in, of carbon, 15, 283; 18, 223: (abst.), 4, 165: of carbon, by combustion in the wet way, 20, 243: of nickel, 16, 110: of nitrogen (abst.), 1, 562: of phosphorus, 18, 955; 19, 792: of phosphorus, notes on, 20, 429: of phosphorus, modification of molybdate method for (abst.), 7, 294: of silicon (abst.), 4, 165: of silicon, notes on Drown's method for, 20, 547: of sulphur, two methods for (abst.), - - - - - 10, 84
- Steel and iron, present possibilities in the analysis of (presidential address), - - - - - 19, 93
- Steel and iron, standard methods for analysis of, 15, 501: thermochemical study of, 19, 754; 20, 78: work of committees on international standards for analysis of, - - - - - 15, 448
- Steel and iron, determination in, of carbon, 15, 213, 450, 526: (abst.), 12, 352: of carbon, colorimetric (abst.), 1, 371: of carbon, gas-volumetric (abst.), 10, 68: of combined carbon, P. 2, 72: of chromium (abst.), 10, 66: of phosphorus (abst.), 1, 104; 9, 8: of silicon (abst.), 1, 104, 285, 371, 562: of sulphur (abst.), - - - 1, 560
- Stereochemical considerations (abst.), - - - - - 12, 155
- Stereochemistry of creatinines, note on, 14, 284: index to literature of, 14, 241: of molecules containing nitrogen (abst.), - - - 12, 166
- Sterilization, alleged, of river water by mine water, - - - 12, 12
- Sterilized solutions, apparatus for measuring (abst.), - - - 9, 123
- Stilbene, a new formation of (abst.), - - - - - 2, 42
- Still, a convenient, 17, 917: and water-oven, a new form of, - - - 17, 122
- Stop-cocks, glass, lubricants for, - - - - - 20, 678
- Stove, electrical laboratory - - - - - 19, 790
- Strontium, atomic weight of, 17, 203: and barium, estimation of, in silicate analysis, 16, 83: and barium, occurrence of, in silicate rocks, 16, 81: separation of, from barium (abst.), - - - 12, 118, 410
- Strontium chloride, volatility of, 19, 156: hydroxide, preparation of (abst.), 7, 65: palladium bromide, 16, 467: ruthenocyanide, 20, 29: sulphate, crystallized, see Celestine; sulphate, reproduction of, by wet process (abst.), 10, 113: titanate (abst.), 8, 178: trinitride, - 20, 228
- Structure, molecular, of carbon compounds, relation to absorption spectra (abst.), - - - - - 4, 144
- Strychnine (abst.), 6, 92: and brucine, physiological action of (abst.), 7, 116: detection of, in an exhumed body, 16, 108: experiments on (abst.), 7, 116: and morphine, separation of, from fatty matters (abst.), 9, 15: note on the test for, 16, 824: post-mortem detection of, 16, 720: reaction for (abst.), 1, 341: reaction of, with iodic acid



- (abst.), 1, 545: researches upon (abst.), - - - - 1, 273
- Strychnine, bromo-, crystallography of (abst.), - - - - 7, 117
- Styphnic acid, constitution of (abst.), - - - - 6, 287
- Styrolene, rotary power of (abst.), - - - - 1, 279
- Styrolene bromide, transformation of, into methyl benzoate (abst.), 2, 92
- Suberic acid, bromine substitution products of (abst.), 4, 204: and sebacic acids, formation of, from crude fatty acids (abst.), 4, 233
- Substitution depending on atomic magnitude of reacting bodies (abst.), 12, 167: law of, in naphthalene series (abst.), - 4, 206
- Succinic acid, amidobenzoic acid derivatives of (abst.), 7, 202: preparation of, from tartaric acid (abst.), - - - - 4, 205
- Succinic acid,  $\alpha$ -methylhydroxy-, production of (abst.), 2, 342: propyl- and iso-propyl- (abst.), 4, 270: tetramethyl- (abst.), - - 12, 157
- Succinic acid series, formation of anhydrides in (abst.), - - 12, 157
- iso-Succinic acid, condensation products of, with benzaldehyde (abst.), - - - - 5, 237
- Succinic anhydrides, decomposition of mono-substituted (abst.), 5, 18: fermentation (abst.) - - - - 1, 273
- Succinimide, 16, 433: heat of solution of, in water and in alcohol, - 18, 156
- Succinyl compounds of toluidine (abst.), - - - - 1, 160, 397
- Sucrose, action of acetic and hydrochloric acids on, 17, 320: determination of, in presence of glucose, - - - - 17, 312
- Sugar, absorption of, by bone black, 1, 509: action of bone black on solutions of, 1, 468: action of nitric acid on, 9, 45: analysis of, gravimeter for, 16, 677: analysis of, singular process of, 7, 42: beet, reducing substances in raw (abst.), 10, 38: commercial valuation of, 1, 514: in corn-stalks and melons, 1, 420: crystallizable, determination of, in the beet, 16, 266: determination of, with ammoniacal copper solution (abst.), 1, 109, 547: determination of, by means of polariscope, 1, 2: determination of, volumetric (abst.), 1, 109: development of, in sorghums, 2, 75: inversion of, by salts, 18, 120, 693: inverted, influence of temperature on polarization of, 1, 26: inverted, sweetness of (abst.), 1, 182: neutral and inverted (abst.), 1, 488: neutral, or inactive glucose (abst.), 2, 364: neutral (inactose) (abst.), 10, 16: of milk, partial synthesis of (abst.), 1, 89: new process for rapid estimation of, etc., 1, 205: palm, analysis of (abst.), 1, 488: pine tree, 13, 228: raw, and cane juice, occurrence of aconitic acid in, P. 1, 220: reducing action of different kinds of, on alkaline copper solutions (abst.), 1, 342: reducing, determination of, in terms of cupric oxide, 18, 749: in *Symphoricarpus racemosa* (abst.), 7, 208: test limits for detection of metals in, - - - - 2, 337
- Sugar beet, on the (abst.), - - - - 5, 118, 119, 119
- Sugar beets, experiments with, - - - - P. 2, 56
- Sugar group, synthetical experiments in (abst.), 9, 191: syntheses in, - - - - 12, 340, 400, 461

- Sugar-cane, amide of, additional notes on, 20, 133: amines in juice of, 18, 743: effect of clarification of juice of, 19, 56: experiments with fertilizers upon, 1, 416: estimation of juice extracted from, 17, 920: the lecithins of, 20, 113: in Louisiana, experiments with, P. 2, 52: principal amide of, - - - - - 19, 881
- Sugars, beet, vanillin in certain unrefined (abst.), 2, 368: cane and invert, action of light and heat on (abst.), 5, 232: in condensed milk, estimation of, 15, 668: contributions to the knowledge of certain kinds of (abst.), 1, 162: determination of, by copper potassium carbonate solution (abst.), 12, 226: different kinds of, method for determination of (abst.), 9, 36: in food-stuffs, estimation of, 19, 190: of hesperidine and isohesperidine (abst.), 10, 79: reactions of, with oxalic anhydride (abst.), 1, 100: recent work on, 16, 549, 670: reduction of cupric salts by (abst.), 10, 189: and solid hydrocarbons, heat of combustion of (abst.), 9, 112: and syrups, incineration of, without sulphuric acid (abst.), - 12, 18
- Suint, composition of (abst.), 8, 185: and fuller's grease, preparation of soap from (abst.), 8, 87: volatile acids of (abst.), - - 9, 173
- Suint waters, transformations produced in (abst.), - - - 8, 203
- Sulphamine-*m*-toluic acid, oxidation of (abst.), - - - 2, 369
- o*-Sulphaminebenzoic acid. See Saccharin.
- Sulphanilic acid (abst.), - - - - - 2, 291
- Sulphates, action of heat on, 5, 178: researches upon (abst.), 1, 278: volumetric determination of (abst.), - - - 12, 72
- Sulphides, action of heat on, 5, 178: of alcoholic radicals, action of chlorine on (abst.), 10, 16: alkaline, action of nitrates on (abst.), 6, 142: conversion of, into sulphates by means of nitric and hydrobromic acids (abst.), 6, 33: determination of, in presence of sulphite and thiosulphate in solution (abst.), 4, 160: metallic, action of acid vapors on, 18, 1096: metallic, action of ammonium salts upon (abst.), 1, 331, 388: of phosphorus (abst.), 6, 189: produced by compression of their elements (abst.), 6, 190: use of bromine for decomposing (abst.), - - - - 9, 35
- Sulphines, researches on (abst.) - - - - - 10, 82
- Sulphinide, new term proposed (abst.), - - - - 2, 222
- Sulphites, action of heat on, 5, 193: determination of (abst.), 1, 89: determination of, in presence of sulphides and thiosulphates (abst.), 4, 160: qualitative test for, in the presence of thiosulphates and sulphates (abst.), - - - - - 9, 117
- Sulpho group, expulsion of, by bromine (abst.), - - - 4, 175
- o*-Sulphobenzoic acid (abst.), - - - - - 2, 222
- Sulphobenzoic acid, nitro- (abst.), - - - - 2, 44
- Sulphocarbaniide, bodies produced by action of alkyl iodides on (abst.), - - - - - 4, 230
- Sulphocarbonates, priority in methods of preparing (abst.), - 6, 37
- Sulphocyanacetone (abst.), - - - - - 5, 122
- Sulphocyanates, heat of formation of some (abst.), - - 4, 234

- Sulphocyanic acid, heat of formation of (abst.), - - - 4, 234
- Sulphocyanogen and selenocyanogen compounds (abst.), - - 12, 231
- Sulphocyanpropimine (abst.), - - - - 5, 122
- Sulphones, formation of, from alkylsulphonated fatty acids (abst.), 7, 203
- Sulphonic acids, aromatic, action of fused alkalis upon (abst.), 2, 294: formation of, from sulphones (abst.), - - - 1, 293, 393
- Sulphonic compounds, action of chlorine on (abst.), - - - 4, 263
- Sulphur, burning of, with white phosphorescent flame (abst.), 5, 65:  
in casein, amount of (abst.), 8, 60: color of vapor of, 20, 757: new combination of carbon and bromine with (abst.), 4, 226: compounds of, occurring in the manufacture of caustic soda, oxidation of (abst.), 6, 28: influence of, on Eggertz' test for carbon in iron (abst.), 10, 115: organic compounds containing, action of chlorine on (abst.), 6, 133: new oxyacid of (abst.), 10, 76: oxygen, and halogens, combined with hydrogen, reciprocal displacements of (abst.), 1, 385: recovery of (abst.), 2, 289: recovery of from alkali waste (abst.), 10, 90: relative activity of the haloid derivatives of (abst.), 8, 164: solubility of, in acetic acid (abst.), 1, 99: sublimation of (abst.), 8, 20: and zinc dust, experiments with (abst.), - - - - 5, 53
- Sulphur chloride, action of, on oils (abst.), 10, 116: chloride, action of, on minerals, 20, 289: chloride, action of, on silver cyanide (abst.), 7, 201: dioxide, action of, on nitric oxide (abst.), 4, 72: dioxide, apparatus for preparing (abst.), 9, 175: dioxide, some reactions of (abst.), 7, 286: new oxychloride of (abst.), 4, 231: oxychloride, action of, on alcohols (abst.), 2, 136: oxychloride, vapor density of one (abst.), 4, 78: oxychlorides (abst.), 2, 61: oxychlorides, action of, on silver nitrate (abst.), 4, 223: salts derived from phosphorus trisulphide (abst.), 6, 76: tetrachloride, combination of auric chloride with (abst.), - - - - 8, 20
- Sulphur, determination of, in asphalt, 20, 882: in calcium carbide, 18, 740: in coal, P. 1, 97: in coal, methods for, 20, 630: in coke, 10, 155: in copper, native, 6, 241: in copper, refined, 17, 814: in iron, 19, 114: in iron, standard solution of iodine for, 16, 112: in cast iron, 18, 1079: in cast iron, white, as hydrogen sulphide, 17, 891: in pig iron, Drown's method for, 18, 406: in iron and steel, new apparatus for, 19, 581: in pig iron and steel, 19, 106: in steel, apparatus for, 19, 288: in steel, two methods for (abst.), 10, 84: in metallurgical products, ores, and fuel (abst.), 1, 560: in oils (abst.), 10, 44: in organic compounds, new method for (abst.), (claim of priority), 1, 487, 542: in proteids (abst.), 8, 60: in pyrites, 16, 398; 17, 181, 397, 772; 18, 446, 685: in pyrites (abst.), 4, 161: in sulphides (abst.), 1, 540: in sulphides, natural (abst.), 1, 487: in vulcanized rubber (abst.), - - - - 7, 178
- Sulphur determinations, in albumin (abst.), 12, 176: standard iodine solution for, - - - - 19, 261
- Sulphuretted hydrogen. See Hydrogen sulphide.

- Sulphuric acid, action of, on bromodurene (abst.), 9, 215: action of, on cinchonine in the presence of oxalic acid (abst.), 10, 83: action of cold, on lead and its alloys, 5, 219: action of, at 100°, on lead and its alloys, 5, 224: action of, upon mercury, 19, 873; 20, 100: action of, on oleic acid (abst.), 8, 85: action of, on potassium iodide (abst.), 5, 232: action of, on quinol, and value of product as a developer, 13, 155: action of, on starch (abst.), 1, 101: behavior of, with nitrogen tetroxide (abst.), 4, 265: and calcium chloride, relative values of, as desiccating agents (abst.), 6, 98: concentrated, and copper, reaction of, 17, 904: on the concentration of (abst.), 6, 244: decomposition of, by mercury, 20, 515: determination of, 18, 682: determination of, as barium sulphate, effect of excess of reagent on, 18, 793: determination of, when combined with alkaline earths (abst.), 7, 251: determination of, by photometric method, 18, 661: determination of, volumetric (abst.), 1, 330: formation of, during the preparation of dithionic acid (abst.), 8, 177: improvements in manufacture of, 15, 624; 16, 498: influence of Glover's tower on the manufacture of (abst.), 7, 124: loss of nitre in the manufacture of (abst.), 6, 141: made in United States, 15, 563: moisture retained by gases dried by means of (abst.), 7, 295: normal percentage of, in wine (abst.), 1, 365: phenomenon in electrolysis of (abst.), 5, 232: presence of, in wine (abst.), 1, 365: purification of (abst.), 7, 244: reaction of chromic anhydride with (abst.), 4, 170: reaction of, with copper, 17, 904: reduction of, by copper, 18, 251: standardization of, 17, 351: table of specific gravity of, etc., P. 2, 26: titration of, for hyponitric acid, P. 2, 149; 1, 18: use of, for oxidizing, in place of nitric acid (abst.), 7, 211: in wine, on the (abst.), - - - - - 1, 364
- Sulphuric acid process, recent theories of, - - - - - 14, 24
- Sulphurous acid, detection of, in wine (abst.), 4, 263: determination of (abst.), 6, 194: determination of, in wines (abst.), 4, 192, 205: purification of mineral oil with (abst.), 8, 206: and sulphites, acidimetric determination of (abst.), 8, 180: titration of (abst.), 6, 26
- Sulphurous baths, observations on (abst.), - - - - - 1, 389
- Sunflower seeds, proteids of, - - - - - 18, 622; 19, 487
- Sunlight, alleged decomposition of phosphorous anhydride by (abst.), 6, 44: decomposition of aqueous solutions of hypochlorous acid and of chlorine in (abst.), 7, 120: influence of, on germs of microbes (abst.), 7, 77: reduction of metallic oxides in, - - - - - 4, 3
- Superphosphates, on (abst.), 6, 244: free acid in (abst.), 9, 224: estimation of precipitated or reduced phosphoric acid in, P. 2, 64: estimation of water in (abst.), 12, 412: rate of reversion in, 6, 224: reversion of (abst.), - - - - - 2, 131
- Support, universal, for pocket spectroscope (abst.), - - - - - 1, 379, 397
- Supports of sheet iron for use with blowpipe, - - - - - P. 2, 106
- Surface tension, determination of molecular weight of liquids by means of, - - - - - 18, 514

Surface tensions of solutions of oxalic, tartaric, and citric acids,	20, 128
Surfaces, curved, apparatus for delineation of, - - -	13, 263
Swallow's nests, composition of edible (abst.), - - -	7, 289
Sweet potato, carbohydrates of (abst.), - - -	12, 351
<i>Symphoricarpos racemosa</i> , sugar in (abst.), - - -	7, 208
Synthesis of organic compounds by electrolysis (abst.), -	4, 239
Syrups and sugars, incineration of, without sulphuric acid (abst.),	12, 18
Tables, specific gravity (abst.), - - -	10, 159
Taka diastase, notes on, - - -	20, 639
Talc, constitution of (abst.), - - -	12, 351
Tallow, adulteration of, with cotton-seed oil (abst.), -	10, 86
Tallow and butter, determination of specific gravity of (abst.),	8, 205
Tan liquors, titration of free acid in (abst.), - - -	1, 367
Tank residues in copper refining, composition and formation of, -	19, 778
Tannate, quinine, estimation of quinine in (abst.), - -	12, 120
Tannic acid, comparison of several methods of determining, 4, 49, 62:	
contained in the berry of the sorbus tree (abst.), 9, 101: determina-	
tion of (abst.), 7, 249: determination of, in tanning materials,	
4, 4: determination of, in wine (abst.), 4, 233: new test for (abst.), 10, 182	
Tannins, action of air on solutions of (abst.), 6, 171: determination of,	
9, 52: (abst.), 4, 195: determination of, comparison of methods for	
(abst.), 1, 102: determination of, improvements in (abst.), 6, 98:	
determination of, by means of metallic oxides, 17, 811: determina-	
tion of, in various vegetable substances (abst.), 6, 35: determina-	
tion of, in wines (abst.), 4, 191: in kola, 19, 89: notes on Ham-	
mer's method of estimating, 9, 56: notes on Loewenthal's method	
of estimating, 9, 63; 15, 560: standard solution of, action of light	
and darkness on, - - -	2, 246
Tannins, classification of, 20, 34: examination of (abst.), 6, 171: oak,	
preparation of, 15, 344: oak bark, recent literature of, - -	20, 35
Tanning extracts, examination of (abst.) - - -	6, 196
Tanning materials, composition of the ashes of, 20, 338: estimation of	
tannic acid in, 4, 4: qualitative determination of, - -	16, 247
Tantalum, derivatives of, 18, 38: qualitative reactions of, 18, 50: separa-	
tion of, from columbium, - - -	18, 48
Tantalum oxide, action of phosphorus pentachloride on, 18, 61: reac-	
tion of carbon tetrachloride with, - - -	18, 532
Tar from animal matters, substances contained in (abst.), 2, 97: coal,	
cumarone of (abst.), 12, 162: coal, high boiling phenols in (abst.),	
7, 57: coal, lutidine of (abst.), 6, 82: coal, occurrence of carboxylic	
acids in (abst.), 7, 249: separation of benzene, toluene, etc., from	
(abst.), 6, 101: from Sutherland's gas producers, results of the	
examination of (abst.), - - -	6, 31
Tars, analytical examination of (abst.), - - -	6, 25
Tariff, report of the committee on, - - -	16, 102
Tarry residues from petroleum, utilization of (abst.), - -	10, 93
Tartar emetics, falsification of (abst.), - - -	6, 37, 175

- Tartaric acid, criticism of methods for determining (abst.), 10, 23: decomposition of, in the presence of glycerol at a high temperature (abst.), 8, 110: detection of, in wine (abst.), 1, 364: determination of, in argols (abst.), 1, 102: determination of, in crude tartar, etc., (abst.), 7, 88: determination of, in lees and inferior argols (abst.), 1, 369: determination of, in wine (abst.), 6, 97: manufacture of (abst.), 4, 292: preparation of succinic acid from (abst.), 4, 205: products of dry distillation of (abst.), 4, 263: surface-tension of solutions of, - - - - - 20, 129
- Tartaric and citric acids, on (abst.), - - - - - 5, 231
- Tartaric glucoside (abst.), - - - - - 6, 132
- Tartrate, acid, estimation of potassium as, P. 1, 98: calcium acid, note on, 13, 144: potassium acid, determination of (abst.), 7, 295: potassium acid, determination of (abst.), - - - - - 9, 120
- Tartrates, influence of, on the digestion of albuminoids, - - - 12, 394
- Tautomeric compounds, determination of the constitution of (abst.), 12, 167
- Tea, analyses of (abst.), 4, 189: Chinese, characteristics, detection of adulterations (abst.), 1, 362: Japanese, analyses of (abst.), 6, 312: Pekoe Ceylon, analysis of, - - - - - 13, 237
- Teaching of chemistry, 15, 463: relation of, to research, - - - 15, 665
- Technical chemistry, opening address before section of, World's Congress of chemists, - - - - - 15, 545
- Telluride ores, assay of, - - - - - 20, 586
- Tellurium, atomic weight of, 18, 208; 19, 367: (abst.), 6, 129: compounds, reactions of (abst.), 5, 116: determination of, in copper bullion, 17, 280: different forms of (abst.), 10, 10: some new reactions of, 17, 853: and selenium, notes on, 19, 771: and selenium, separation of, and preparation of, from lead chamber deposit (abst.), 6, 47: separation of, from copper residues, - - - 17, 849
- Tellurium dioxide, and its combinations with acids (abst.), 8, 163: new oxide of (abst.), 5, 115: sulphoxide (abst.), - - - 5, 116
- Temperature, calorimetric determination of (abst.), 2, 371: correction of errors due to change of, in volumetric analysis, P. 1, 188: influence of, on reaction between barium chloride and potassium oxalate (abst.), 2, 346: influence of, in sugar polarization, - - - 1, 26
- Temperature regulator (abst.), - - - - - 1, 91
- Temperatures, critical, of liquids (abst.), - - - - - 4, 264
- Terbium, spectrum of (abst.), - - - - - 4, 223
- Terebenthic acid (abst.), - - - - - 4, 227
- Terpenes, chemistry of (abst.), 7, 121: contribution to the knowledge of (abst.), 7, 122: and essential oils (abst.), 7, 246: molecular refraction of (abst.), - - - - - 4, 173
- Terpiline, optically active, transformation of oil of turpentine into (abst.), 8, 72: transformation of, into a menthene (abst.), - - - 10, 191
- Terpinol, synthesis of an inactive (abst.), - - - - - 8, 183
- Test paper, methyl violet, - - - - - 4, 31
- Testing and sampling, international methods of (abst.), - - - 6, 32

Tetrabrombenzene (abst.), - - - - -	4, 175
Tetrabromdiacetyl, symmetrical (abst.), - - - - -	12, 160
Tetrahedrite from Peru, analysis of (abst.), - - - - -	1, 393
1:5-Tetrahydronaphthalenediamine, alicyclic, decomposition of, into its optically active components (abst.), - - - - -	12, 164
Tetrahydroquinoline (abst.), - - - - -	5, 241
Tetrallylammonium bromide, preparation of, - - - - -	1, 387
Tetramethylbenzidine (abst.), - - - - -	6, 87
Tetramethyldiamidothiobenzophenone (abst.), - - - - -	10, 40
Tetramethylethylene and its derivatives (abst.), - - - - -	2, 54
Tetramethylsuccinic and trimethylglutaric acids (abst.), - - - - -	12, 157
Tetraphenylazine, a study of, - - - - -	18, 112
Tetraphenylene, disulpho-, - - - - -	13, 270
Tetraphenylethylene, preparation of (abst.), - - - - -	10, 81
Tetraphenylmethane, on, - - - - -	20, 773
Tetrathionate, potassium, experiments on (abst.), - - - - -	4, 224
Tetraphenylammonium bromoselenate, - - - - -	20, 574
Thalleoquin test for quinine, modifications of, - - - - -	19, 331
Thallin compounds, derivatives of <i>p</i> -quinanisoil (abst.), - - - - -	7, 84
Thallium, atomic weight of, 16, 186; 17, 209: some new compounds of, 18, 970: determination of (abst.), 12, 17: electrolysis of pyrophosphate of (abst.), - - - - -	12, 172
Thallium oxides, action of hydrogen dioxide on (abst.), - - - - -	2, 50
Thallous platinocyanide, 18, 976: tellurate, 18, 975: thallic trinitride, 18, 973: trinitride, - - - - -	18, 970
Theobromine, determination of, in cocoa and chocolate (abst.), 1, 365: determination of, in kola, 19, 87: transformation of xanthine into (abst.), - - - - -	4, 264
Thermochemical data (abst.), 2, 88: investigations, (abst.), 1, 293: results, remarks on (abst.), - - - - -	6, 34
Thermo-electric elements, electromotive forces and resistance of (abst.), - - - - -	1, 585
Thermometer, air, new form of, for technical purposes, 12, 277: for high temperatures, improved mercurial, - - - - -	16, 396
Thermometers, official methods for verifying, 20, 921: rise of freezing-point in (abst.), - - - - -	12, 413
Thermometry, use of argon in, - - - - -	17, 477
Thermoregulator (abst.), - - - - -	7, 92
Thermostat, delicate (abst.), - - - - -	1, 91
Thiacetic acid a substitute for hydrogen sulphide in qualitative analysis, - - - - -	17, 338
Thialdine, oxidation of, with nitric acid (abst.), - - - - -	1, 555
Thiamides and amidines of monobasic organic acids (abst.), - - - - -	2, 188
Thiocarbamate of ammonium, use of, in analytical work (abst.), - - - - -	9, 115
Thiocarbanilide, - - - - -	3, 151
Thiocyanates, metallic, action of, on aliphatic chlorhydrins - - - - -	20, 668
Thiocyanates, halo-, of lead, study of, - - - - -	19, 820

- Thioformanilide, action of heat on (abst.), - - - - 4, 206
- Thiophen, preparation of, 12, 83: synthesis of (abst.), - - - 7, 206, 230
- o*-Thiophendicarboxylic acid and *o*-thioxen (abst.), - - - 9, 193
- Thiophosphoryl chloride, action of, on silver nitrate (abst.), - 4, 224
- Thiosulphate, determination of, in presence of sulphide and sulphite (abst.), - - - - 4, 160
- Thiosulphates, conversion of, into sulphates by means of potassium permanganate (abst.), 6, 96: determination of (abst.), - 1, 89
- Thiourea, action of alcoholic potassium hydroxide on (abst.), 8, 166: compound, a new, 1, 415: transformation of carbon oxysulphide into (abst.), - - - - 4, 236
- Thioxalate, ethyl (abst.), - - - - 5, 236
- o*-Thioxen and *o*-thiophendicarboxylic acid (abst.), - - - 9, 193
- Thollon's spectroscope, note on (abst.), - - - - 1, 172
- Thomas slag, adulteration of (abst.), 12, 413: determination of phosphorus in (abst.), - - - - 9, 118
- Thorite, mineral resembling, analysis of, - - - - 2, 73
- Thorium, atomic weight of (abst.), 5, 118: estimation of, 18, 782: separation of, from iron, 20, 846: separation of, from other rare earths, by means of potassium trinitride, - - - 18, 947
- Thorium dioxide, action of phosphorus pentachloride upon, 17, 654: oxide (abst.), 7, 285: tetrabromide, derivatives of, 20, 839: tetrachloride, derivatives of, - - - - 20, 815
- Thyrenesulphonic acid, combination of, with diazo compounds, 3, 112: and some of its salts, - - - - 3, 103, 110
- Thymol, synthesis of, from cuminol (abst.), - - - - 4, 205
- Thymol and resorcinol, reactions of (abst.), - - - - 12, 502
- Tiglic and angelic acids, constitution of (abst.), 1, 241: contributions to the knowledge of (abst.), - - - - 1, 240
- Tin, new acid of (abst.), 10, 187: alloys of, with antimony, arsenic and lead, analysis of, 17, 869: alloys of, with lead, blowpipe reactions of, P. 2, 108: alloys of, with lead, commercial valuation of, 16, 451: alloys of, with lead, specific heat of (abst.), 8, 197: atomic weight of, 17, 210: behavior of chlorosulphonic acid with (abst.), 4, 261: combinations of disulphides and diselenides of (abst.), 5, 117: detection of, in presence of antimony (abst.), 4, 168: determination of, in aluminum solders, 18, 777: determination of, electrolytic, in tin ores, 20, 687: determination of, in tin slags (abst.), 7, 210: electrolysis of pyrophosphate of (abst.), 12, 171: a grey modification of (abst.), 1, 494: occurrence of, in canned food, 13, 200: organometallic compounds of (abst.), - - - 1, 399
- Tin, separation of, from antimony (abst.), 8, 76; 9, 11: from antimony, volumetric (abst.), 8, 200: from antimony and arsenic (abst.), 8, 76; 9, 11: from antimony and arsenic, qualitative (abst.), 1, 483; 6, 98: from bismuth, 15, 204: from cadmium, 15, 201: from copper, 15, 197: from gold and platinum (abst.), 8, 278; 10, 156: from



- mercury, 15, 204: from titanium (abst.), 12, 175: from tungsten (abst.), - - - - - 9, 200
- Tin, phosphor-, analysis of, - - - - - 19, 396
- Tin<sup>+</sup>, photo-chemical estimation of (abst.), - - - - - 10, 86
- Tintometer (abst.), - - - - - 10, 115
- Titanates of barium and strontium (abst.), - - - - - 8, 178
- Titanic acid, test for (abst.), 7, 210: volatility of, 20, 467: volumetric determination of, in iron ores, - - - - - 17, 878
- Titaniferous iron ores, analysis of (abst.), - - - - - 4, 164
- Titanium in blast furnaces, 12, 91: in clays (discussion), 18, 914: detection and estimation of (abst.), 5, 54: determination of, in aluminum alloys, 18, 775: determination of, by hydrogen peroxide, 13, 210: determination of, in iron ores (abst.), 4, 165: error in determining, due to presence of fluorine, 17, 718: occurrence of, 18, 402: separation of, from iron, 16, 427; 20, 513, 854: separation of, from tin, - - - - - 12, 175
- Titanium rubidium fluoride, - - - - - 18, 58
- Titanium tetrachloride, action of, on acetic acid and acetic anhydride (abst.), 2, 363: compound of, with acetyl chloride (abst.), 2, 430: compound of, with ethyl oxide (abst.) 2, 434: compound of, with phosphorus trichloride (abst.), - - - - - 2, 434
- Tobacco, estimation of nicotine in, - - - - - 2, 338
- Tobacco and tea Japanese (abst.), - - - - - 6, 312
- Tolane, hydration of (abst.), - - - - - 10, 83
- Toluene and benzene, action of methylene chloride on (abst.), 6, 163: and methyl chloride in presence of aluminum chloride, hydrocarbons formed from (abst.), 1, 280, 398: separation of, from crude tar, naphtha, and crude benzenes (abst.), 6, 101: syntheses by action of metallic chlorides upon (abst.), - - - - - 1, 397
- Toluene, amidooctyl- (abst.), 7, 176: brom-*p*-ethyl-, oxidation of, 1, 284: nitro-, presence of *m*-nitrotoluene in commercial (abst.), 1, 486: *o*-nitro-, production of anthranilic acid from (abst.), - 2, 227
- Toluenes, *iso*-butyl-*o*-amido-, isomeric (abst.), 7, 88: dihydroxy- (abst.), - - - - - 5, 61
- o*-Toluenesulphamide, oxidation of (abst.), - - - - - 2, 221
- Toluenesulphonchloride (abst.), - - - - - 1, 287
- Toluic acid, sulphamine-*m*-, oxidation of, - - - - - 2, 369
- o*-Toluic acid, nitro- (abst.), - - - - - 6, 163
- Toluidine, compounds of, with naphthoquinone (abst.), 5, 19: compounds of nickel and cobalt chlorides with (abst.), 1, 165: introduction of methyl or ethyl groups into (abst.), 5, 64: succinyl compounds of (abst.), 1, 160, 397: nitro-, a new (abst.), 7, 174: oxypropyl- (abst.), - - - - - 5, 29, 58
- o*-Toluidine, compounds of, with metallic salts, - - - - - 3, 149
- o*-Toluidine, nitro-, and a few of its derivatives (abst.), - - - 6, 310
- o*- and *p*-Toluidine, some derivatives of (abst.), - - - - - 2, 171
- p*-Toluidine, compounds of, with metallic salts, 3, 146: and dichlor-

- Uranyl chloride, compounds of, with ammonia (abst.), 7, 121: selenates and selenites (abst.), - - - - - 1, 255
- Urea, action of hypochlorites on (abst.), 1, 101: action of alcoholic potassium hydroxide on (abst.), 8, 166: apparatus for rapid estimation of, 7, 72: determination of, by means of alkaline hypochlorites and hypobromites (abst.), 2, 132: determination of, destruction of foam in (abst.), 9, 123: determination of, rapid method for, 12, 283: determination of, with sodium hypobromite (abst.), 2, 430: determination of, in urine (abst.), 4, 196: on Doremus' apparatus for estimation of, 7, 166: on Doremus' apparatus for estimation of, rebuttal, 7, 168: formation of, from albumin (abst.), 12, 475: heat of solution of, in water and in ethyl alcohol, 18, 156: influence of sugar on determination of (abst.), 2, 132: new ferment for (abst.), 1, 387, 488: review of Knop-Hufner method for the determination of (abst.), 7, 292: transformation of carbon oxysulphide into (abst.), 4, 236: transformation of, into cyanamide (abst.), - 4, 221
- Urea acroléin, - - - - - 5, 36
- Urea chloride synthesis, modification of (abst.), - - - - - 12, 229
- Ureas, condensed, remarks upon Schiff's publications upon, 5, 36: substituted, action of alcoholic potassium hydroxide on (abst.), 8, 166
- Ureometer, new form of, - - - - - 7, 72; 8, 96; 15, 650
- Urethane, heat of solution of, in water, methyl, ethyl, and propyl alcohols, chloroform, and toluene, - - - - - 18, 156
- Urethane, camphol- (abst.), - - - - - 4, 235
- Urethanes of the aliphatic series, two properties of (abst.), - - 8, 166
- Urethanes, dithio- (abst.), - - - - - 4, 268
- Uric acid (abst.), 7, 29: derivatives of alloxan series, syntheses of (abst.), 1, 172, 275: determination of (abst.), 8, 78: influence of glycerol and fat on the secretion of, in man (abst.), 8, 185: in urine, rapid estimation of, - - - - - 19, 649
- pseudo*-Uric acid (abst.), - - - - - 1, 389
- Urinary calculi, analyses of, - - - - - P. 1, 2, 60
- Urine, bacterial, determination of albumin in (abst.), 12, 415: and blood, peptones in (abst.), 8, 231: composition of normal, 19, 382: determination of albumin in (abst.), 10, 197: determination of bile constituents in (abst.), 12, 414: determination of uric acid in, 19, 649: diabetic,  $\beta$ -hydroxybutyric acid in (abst.), 7, 177: ethyldiacetic acid in (abst.), 1, 254: healthy, nitric acid in, and method for its determination, P. 2, 98: of herbivora, source of hippuric acid in (abst.), 2, 138: imperfectly oxidized phosphorus in (abst.), 6, 129: large crystals in old (abst.), 4, 174: and milk of herbivora, estimation of nitrogen in (abst.), 8, 279: mineral constituents of, P. 1, 2, 61: paraxanthine in (abst.), 5, 65: pathological (abst.), 7, 288: rapid method of estimating urea in, 12, 283: volatile fatty acids in (abst.), 8, 86: see also Urea, Ureometer, Uric acid.
- Uruguay, chemical study of products of (abst.), - - - - - 4, 237
- Valence of oxygen and structure of its compounds (review) - 18, 283

- Valence, teachings of, in relation to the electro-chemical theory (abst.), - - - - - 2, 291
- Valeric acid, hydroxy-, from allyldimethylcarbinol (abst.), - - - 2, 178
- Vanadates, thio- (abst.), - - - - - 12, 472
- Vanadic acid, separation of, from tungstic acid (abst.), 12, 175: volumetric determination of (abst.), - - - - - 1, 97
- Vanadium, compounds of, in soda liquors (abst.), 4, 73: determination of, P. 1, 61: determination of, by means of oxycellulose (abst.), 8, 78: extraction of, from basic slags of Creusot (abst.), 4, 241: occurrence of, in American hematites, etc., P. 1, 84: occurrence of, in American magnetites, P. 1, 58: separation of, from arsenic, 18, 1051: volumetric estimation of, in presence of small quantities of chromium, - - - - - 20, 461
- Vanadium oxychloride, preparation of (abst.), 8, 71: trichloride from vanadium trisulphide (abst.), - - - - - 5, 50
- Vanillin in certain unrefined beet sugars (abst.), 2, 368: new derivatives of, preliminary note on, - - - - - 20, 316
- Vapor density, determination of, 12, 399: (abst.), 1, 170; 4, 176: determination of, below the boiling-point (abst.), 12, 168: determination of, at high temperatures, for substances which attack mercury (abst.), 1, 377: determination of, in a vacuum, limits of the method (abst.), 1, 292, 380: observations on (abst.), - - - 2, 371
- Vapor tensions of mixtures of volatile liquids, - - - 17, 615, 690
- Vapor pressures, new method of determining (abst.), - - - 7, 53
- Vaporization of metals *in vacuo* (abst.), - - - - - 4, 242
- Varnishes, analysis of, - - - - - 16, 344
- Vegetable tissues, general method for analysis of (abst.), - - - 1, 345
- Vegetation, determination of oxalic acid in (abst.), 8, 37: injury to, by gases from manufacturing processes (abst.), 6, 198: researches in (abst.), - - - - - 8, 21
- Velocity of reactions (abst.), 2, 368: of the reaction between ferrous chloride, potassium chlorate, and hydrochloric acid, - - - 19, 199
- Ventilation as measured by carbon dioxide in the air, - - - 15, 572
- Veratralbine, chemistry of (abst.), - - - - - 1, 554
- Veratrine, chemistry of (abst.), - - - - - 1, 553
- Vesbium (abst.), - - - - - 2, 224
- Vesuvius, ashes from, composition of (abst.), - - - - - 4, 237
- Vetch, proteids of the, - - - - - 18, 583; 20, 406, 410
- Vibrations, sonorous, chemical stability of matter under influence of (abst.), - - - - - 2, 433
- Vicilin, a proteid from the horse-bean, pea, etc., 20, 348, 414: properties of, - - - - - 20, 414
- Vignin, a proteid of the cow pea, composition and properties of, 19, 497
- Vinaconic acid, constitution of (abst.), 7, 82: synthesis of (abst.), - 7, 81
- Vinegar, analysis of, and some characteristics of pure cider vinegar, 20, 3: analyses of, 2, 335: and cider, 7, 162: determination of acetic acid in, - - - - - 17, 741, 83;

- Vinyl bromide and tribromide, remarks on the action of, on benzene in the presence of aluminum chloride (abst.), - - - 6, 166
- Violet, Lauth's, spectroscopic examination of, - - - 6, 304
- Viscosimeter, torsion, 15, 173: standardizing of, - - - 15, 454
- Viscosimetry (abst.), - - - 8, 109
- Viscosity, catalytic phenomena caused by (abst.), - - - 1, 386
- Vitriol. See Sulphuric acid.
- Vitellin and conglutin, - - - 18, 609
- Volhard's method of determining manganese, sources of error in, - 18, 498
- Volta prize (abst.), - - - 5, 121
- Voltmeter, new form of, 13, 207: silver, use of Gooch crucible as, - 12, 300
- Volume alteration attending the mixture of salt solutions (abst.), - 5, 97
- Volume. See Molecular volume, etc.
- Volumes, additions to the law of (abst.), 1, 168: of solutions of hydrated salts, relations to water of composition (abst.), - 1, 392
- Volumenometer (abst.), 1, 90, 586: simple form of (abst.), - 1, 379
- Volumeter, a new gas- (abst.), - - - 12, 175
- Volumetric analysis, use of the term "normal" in (abst.), - 10, 114
- Volumetric apparatus, 20, 731: government facilities for standardizing, - - - 20, 912
- Wages of chemical workers in United States, - - - 15, 568
- Wall papers, amounts of arsenic found in various, - - - 2, 339
- Walnut, proteids of the, - - - 18, 616
- Walnut oil (abst.), - - - 8, 184
- Wanklyn and Adams' method for estimating fat in milk, - - 12, 488
- Want column in Journal, report of committee on, - - - 20, 234
- Wash bottle, Chapman, 13, 126: with compressed air, 16, 148: for hot water, 17, 517: useful form of, - - - 19, 584
- Washington Section, meetings of, 17, (3), (23), (35), (40), (70); 18, (27), (36), (57), (66), (75); 19, (10), (16), (23), (28), (35), (43); 20, (2), (31), (48), (65), (71), (106).
- Water, action of, on bismuth iodide (abst.), 4, 142: action of, on lead pipe, 13, 176: action of, on zinc and lead (abst.), 2, 432: analysis of remarkable sample of, 14, 34: in alcohol, detection of traces of, 1, 38: clarification of, by alum (abst.), 7, 200: combination of, with salts (abst.), 8, 179: of crystallization of alum (abst.), 9, 100: of crystallization, specific volume of (abst.), 2, 350: distilled, apparatus for obtaining, from service steam, P. 1, 211: distilled, free from ammonia, preparation of (abst.), 1, 586: hygiene of, 19, (18): microscopic examination of (abst.), 1, 367, 578: in milk, determination of (abst.), 4, 188: natural aperient, variability of (abst.), 10, 183: potable, and disease, 9, 44: potable, filtration of (abst.), 6, 140: rain, action of impure, on lead pipes, P. 1, 66: rain, proportions of chlorine and nitrogen in tropical, 19, 1: river, alleged sterilization of, by mine water, 12, 12: snow, examination of, 6, 187: softening of, by the Porter-Clark process (abst.), 6, 103: softening of, by use of fluorides, 12, 303: spring, unusual form

- of, 14, 115: for use in boilers (abst.), 10, 172: for use in boilers, purification of, 15, 610: volumetric composition of, - - - 12, 275
- Water analysis: alkalinity or acidity of potable waters, P. 2, 71: ammonia test in waters (abst.), 1, 565: ammonia process for water analysis, 5, 104: the ammonia method, with some new apparatus, 12, 457: collector for ammonia distillate, 20, 286: bacteria, testing for (abst.), 1, 103: chemical versus bacteriological analysis, 18, 166: bacteriological examination, sanitary value of a, 19, 591: carbon (and nitrogen), determination of, in waters, 9, 162: carbon dioxide, free, in water (abst.), 10, 71: estimation of carbon dioxide in water, by titration, 13, 98: chlorine, estimation of, in water, 16, 71: colors of natural waters, measurement of, 18, 264: valuation of color in, 18, 488: colorimeter for (abst.), 4, 163: coloring matter of natural water, 18, 68: hardness in waters, remarks on determination of (abst.), 6, 170: Clark's method for estimating of hardness in waters, 13, 114: lithium, determination of, in mineral waters, 12, 214: nitrates and nitrites, determination of, in water (abst.), 4, 163: determination of nitrates, 16, 72, 122, 193: determination of nitrites, 18, 21: test for nitrites in water (abst.), 4, 163: detection and estimation of nitrous acid in waters, 1, 136: nitrogen, organic, determination of, in waters (abst.), 4, 162: nitrogen and carbon, determination of, in waters, 9, 162: organic matter in water, actinic method for determination of, 8, 269: direct oxidation of, 14, 233: differentiation of, 20, 497: platinum iodide as a reagent for deleterious, 5, 74: organic purity of water, determination of (abst.), 1, 106: phosphoric acid, determination of, in contaminated waters (abst.), 9, 174: potable waters, analysis of, P. 1, 201: examination of (abst.), 4, 162: technical analysis of water (abst.), 12, 73: examination of water for technical purposes (abst.), 10, 180: Wanklyn's method of water analysis, necessity of standard conditions in, 8, 221: zinc in water, volumetric determination of (abst.), 1, 564: zinc in potable water (abst.), - - - 6, 77, 214
- Water analysis, P. 2, 1; (abst.), 9, 219; 12, 413: chemical, versus bacteriological, 18, 166: improved methods of, 17, 296: modes of combination of the elements indicated in (abst.), - - - 1, 336
- "Water" results and the public (abst.), - - - 9, 30
- Water supply, of Albany, N. Y., 7, 261: of Asheville, N. C., examination of, 8, 154: of cities in United States, relative to purity of, 3, 98: of Jersey City and Newark, pollution of, 9, 81: of New York City, 4, 15: of New York City, contamination of, 4, 127: of New York City, study of, 8, 3: of Philadelphia, - - - 8, 126
- Water supplies, the quality of, - - - 16, 772
- Waters, of the Auvergne, mineral (abst.), 1, 271: of the Bourbois, analyses of (abst.), 2, 365, 431: Buxton thermal, analysis of (abst.), 4, 170: Croton, examination of, 8, 147, 157: from the Dismal Swamp, examination of, 8, 153: from Irondale, W. Va., analysis

- of, mineral, 6, 123: from Isthmus of Panama, analyses of (abst.), 4, 242: from Lake Hope, New Zealand, analysis of, 9, 168: from Marienbad, analysis of (abst.), 2, 135: mineral, containing iron and nitrates (abst.), 2, 431: from the Missouri lead region, analysis of, P. 1, 179: Niagara river, aeration and composition of, 12, 449: Niagara river, peculiar reaction of, 14, 221: of river Nile, analysis of, 15, 34, 84: from Rosheim, analysis of, mineral (abst.), 1, 491: of Susquehanna River at Cooperstown, N. Y., examination of, 8, 150: from Texas, analysis of, mineral, 11, 141: of Yellowstone National Park, analysis of (abst.), - - - 10, 188
- Water-bath, constant level for, 16, 405: design for, - - - 15, 374
- Watermelon, mineral constituents of, - - - 18, 1061
- Water-oven and still, new form of, - - - 17, 122
- Waterproofing, Chevallot's process for (abst.), - - - 9, 17
- Watts fund, - - - 7, 158
- Weighing, electrical disturbance in, - - - 20, 428
- Weighing flask, new calibrated, 19, 198: to serve as a burette, - 4, 6
- Weighing pipette, new, - - - 15, 190
- Weights, reduction of, to vacuum (abst.), - - - 1, 250
- Weldon-Pechiney process for manufacture of chlorine (abst.), - 9, 224
- Wells in cities and towns, necessity for inspection of, - - 13, 44
- Wheat, copper normally present in (abst.), 4, 188: insoluble carbohydrates of, 19, 291: manganese in the ash of, P. 2, 141: nitrogen compounds in different varieties of, 2, 333: proteids of, - - 16, 524
- Wheat starch, constitution of, - - - 19, 291
- Whey, milk, and skim-milk, comparative study of, - - - 15, 347
- White lead, electrolytic process for manufacture of, - - - 17, 835
- Wine, alcohol in, determination of (abst.), 1, 573: alcohol in, correction for conversion of percentage by volume to percentage by weight of (abst.), 1, 572: champagne, clarification of (abst.), 4, 234: coloring-matters added to, systematic course for detection of (abst.), 1, 576, 577, 578: detection of aniline colors in (abst.), 1, 576: detection of artificial red coloring-matter in (abst.), 8, 81: detection of Bordeaux red in (abst.), 4, 191: detection of corallin in (abst.), 1, 576: detection of fuchsine in (abst.), 1, 574, 575, 576, 578: detection and determination of fuchsine in (abst.), 7, 294: detection of orange and yellow colors in (abst.), 8, 80: detection of free tartaric acid in (abst.), 1, 364: determination of acetic acid in (abst.), 1, 364: determination of astringent substances in (abst.), 4, 242: determination of extract in (abst.), 7, 63: determination of glycerol in (abst.), 2, 364; 4, 191: determination of phosphoric acid in (abst.), 11, 53: determination of red coloring-matters in (abst.), 4, 191: determination of sulphurous acid in (abst.), 4, 192: determination of tannin and cenogallic acid (abst.), 4, 191, 233: determination of tartaric acid in (abst.), 6, 97: examination of, for compounds of rosaniline (abst.), 8, 57: influence of plaster of Paris on the composition and chemical

- character of (abst.), 6, 104: malt, 19, (30): method for analysis of (abst.), 4, 189: normal percentage of sulphuric acid in (abst.), 1, 365: palm, composition of (abst.), 1, 402: presence of glycol in (abst.), 4, 242: presence of sulphuric acid in (abst.), 1, 364, 365: spirits of, composition of (abst.), 8, 58: sulphurous acid in (abst.), 4, 263  
 Wine oil (abst.), - - - - - 1, 296  
 Wines of Alsace-Lorraine, analyses of (abst.), 9, 219: analysis of pure (abst.), 6, 97: artificially colored claret (abst.), 5, 23: of bad years, composition of (abst.), 4, 192: California, some characteristics of, 16, 597: California, coloring-matter in red, 17, 213: existence of manganese in (abst.), 6, 200: Ohio, composition of, 20, 878: valuation of (abst.), - - - - - 6, 138  
 Wire drawing, lubricant for (abst.), - - - - - 8, 275  
 Wolframyl chloride, action of ammonia gas upon, - - - - - 15, 68  
 Wollastonite, action of sodium hydroxide and carbonate on (abst.), 4, 199  
 Wood, analysis of (abst.), 1, 345: composition of, researches on the (abst.), 1, 295: treatment of, in preparation of paper pulp, - - - 19, 314  
 Wood gum, composition of, 18, 214: from birch wood, - - - - - 18, 218  
 Wool grease, - - - - - 16, 535  
 Wool wash water. See Suint.  
 Wool, cotton, and silk, absorption of weak reagents by (abst.), - - - 5, 98  
 Wool and fur, origin, structure, composition, etc. (abst.), - - - 10, 184  
 Work, principle of maximum (abst.), - - - - - 7, 138  
 World's Chemical Congress. See Congress of Chemists.  
 Writing, detection of fraudulent (abst.), - - - - - 9, 224  
 Xanthine, transformation of, into theobromine and caffeine (abst.), 4, 264  
 Xanthine bases, formation of, from egg albumin (abst.), - - - 1, 165  
 Xylan, - - - - - 18, 215  
 Xylene, derivatives of (abst.), 8, 96: relations of physical constants of isomeric derivatives of (abst.), 8, 178: separation of, from crude tar, naphtha, and crude benzenes (abst.), - - - - - 6, 101  
*o*-Xylene, derivatives of (abst.), - - - - - 7, 115  
*o*-, *m*-, and *p*-Xylene, determination of (abst.), 6, 101: *p*-Xylene, estimation of (abst.), - - - - - 7, 90  
 Xylenes, from English and Scotch tar (abst.), 7, 89: and phthalic anhydride, acids produced from (abst.), - - - - - 5, 17  
*p*-Xylenes, dinitro-, constitution of three (abst.), - - - - - 7, 175  
 Xylenesulphamides, oxidation of (abst.), - - - - - 1, 116, 283  
 Xylenesulphonic acids, oxidation of, - - - - - P. 2, 15  
 Xylenol, brominated (abst.), - - - - - 6, 132  
 Xylidine, action of acrolein on, 5, 1: action of benzaldehyde on, 8, 173: compounds of nickel and cobalt chlorides with (abst.), 1, 165: compound of cœnanthaldehyde with, - - - - - 5, 2  
 1:2:4-*o*-Xylidine (abst.), - - - - - 6, 162  
 Xylose and wood gum from straw, etc. (abst.), - - - - - 12, 158  
 Yolk of egg, coloring-matter in (abst.), - - - - - 12, 165  
 Yopon. See *Ilex cassine*.

- Yttrium, atomic weight of, - - - - - 18, 209
- Zinc, alloys of, with platinum metals, explosive (abst.), 4, 240: allyl iodide, and butyl iodide, action of, on acetone (abst.), 7, 58: atomic weight of, 18, 203: electrolysis of pyrophosphate of (abst.), 12, 170: magnesium and iron, as reducing agents with ferric salts (abst.), 4, 223: in potable water (abst.), - - - 6, 77, 214
- Zinc acetate, water of crystallization of (abst.), 1, 158: ammonium compounds, manufacture and use of (abst.), 6, 139: bromide, preparation of hydrobromic acid from (abst.), 6, 32: chloride, combinations of, with hydrochloric acid (abst.), 8, 163: chloride, hydrates of (abst.), 8, 162: ferrite, artificial production of franklinite (abst.), 9, 100: ferrocyanide, 18, 1100; 19, 542, 547: hydroxide, crystallized (abst.), 7, 285: oxide in alkaline solutions, 2, 29: oxide deposit in blast-furnace, analysis of, 4, 256: new oxychloride of (abst.), 4, 239: sulphate and potassium hydroxide, reaction between, 17, 358: sulphide, determination of (abst.), - - - 9, 35
- Zinc, determination of, 17, 310: in aluminum alloys, 18, 776: electrolytic, 18, 659: (abst.), 1, 330: in potable water (abst.), 1, 564: by precipitation as oxalate (abst.), 1, 327: as pyrophosphate, 4, 26: volumetric, 17, 473: (abst.), 1, 329, 534; 4, 166: volumetric, indicator for (abst.), 4, 166: in zinc dust, 7, 136: (abst.), 9, 36: in zinc ores (abst.), - - - - - 4, 166; 12, 502
- Zinc dust, action of, on benzyl chloride (abst.), 8, 181: occlusion of hydrogen by (abst.), 7, 113: source of hydrogen occluded by (abst.), 7, 286: and sulphur, experiments with (abst.), 5, 53: valuation of (abst.), - - - - - 12, 503
- Zinc ethide, action of oxygen upon (abst.), - - - - - 12, 156
- Zinc ores, notes on the analysis of, - - - - - 11, 49
- Zinc rods, peculiar corrosion of, - - - - - 13, 286
- Zinc, separation of, from aluminum (abst.), 1, 529: from arsenic, by hydrochloric acid gas, 18, 1041: from bismuth, electrolytic, 15, 104: from cadmium (abst.), 7, 296; 8, 277: from cobalt (abst.), 8, 277; 9, 9: from copper, electrolytic, 15, 103: from gallium (abst.), 4, 168: from iron (abst.), 1, 529; 8, 277; 9, 9: from manganese (abst.), 1, 327; 8, 277: from nickel (abst.), 1, 332; 6, 288; 8, 277; 9, 9
- Zinc tanks, action of water on (abst.), - - - - - 2, 432
- Zinc-copper couple, estimation of chlorates by (abst.), - - - 10, 26
- Zirconates, a study of the, - - - - - 18, 434
- Zirconia, preparation of, - - - - - 8, 91
- Zirconium, revision of the atomic weight of, 20, 119: separation of, by means of sulphurous acid, 16, 475: separation of, from iron, 20, 846: separation of, from uranium, with hydrogen peroxide, - 20, 514
- Zirconium chlorides, 17, 842: chlorides, examination of, 16, 469: dioxide, action of phosphorus pentachloride upon, 17, 654: dioxide, some properties of, 20, 273: nitride, preparation of, 20, 843: oxalates, 19, 12: oxybromides, 20, 324: oxychlorides, 20, 321: oxyiodides, 20, 328: sulphite, 17, 448: tetrabromide, derivatives of, 20, 839: tetrachloride, derivatives of, 20, 815: tetraiodide, - 18, 673

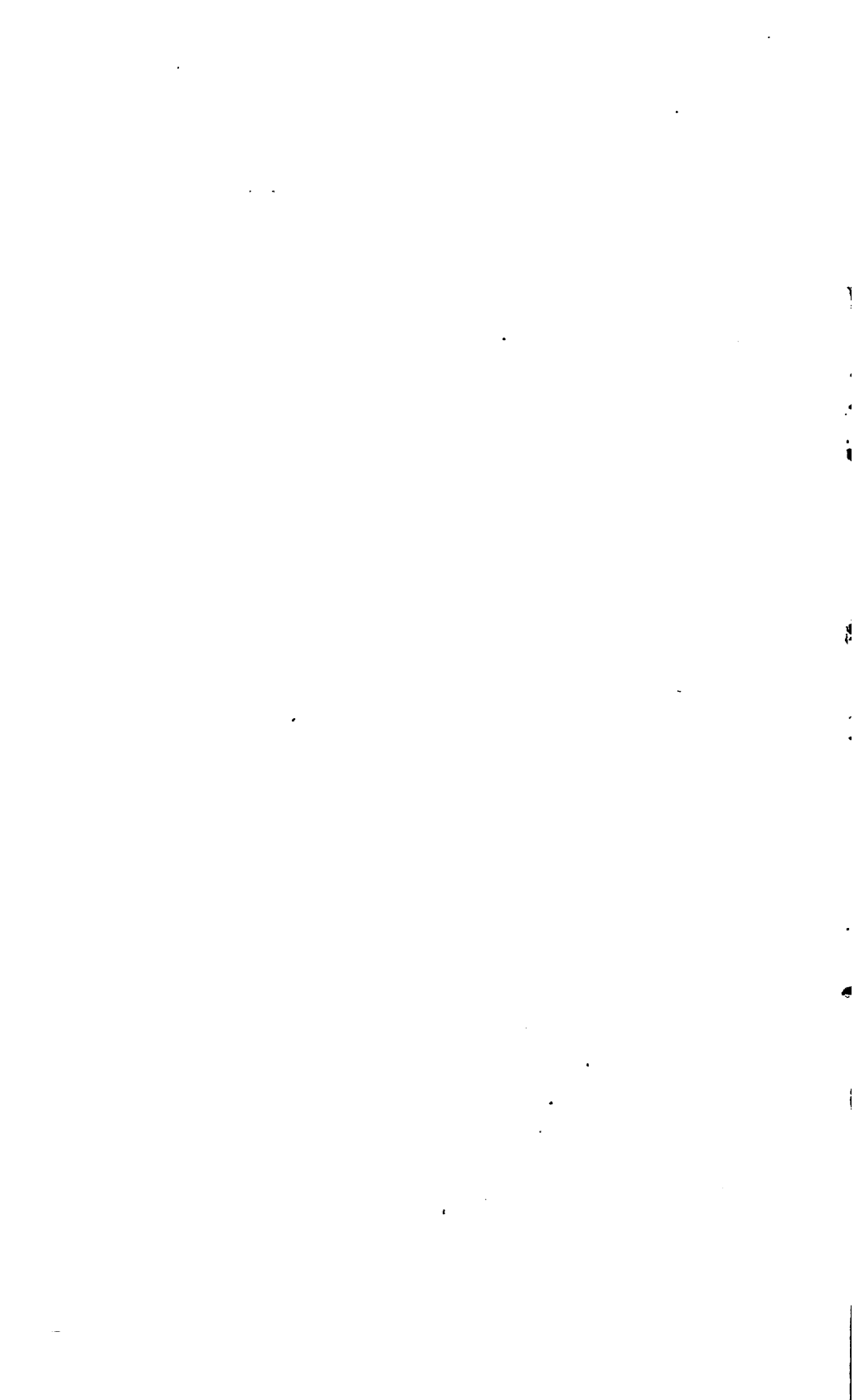


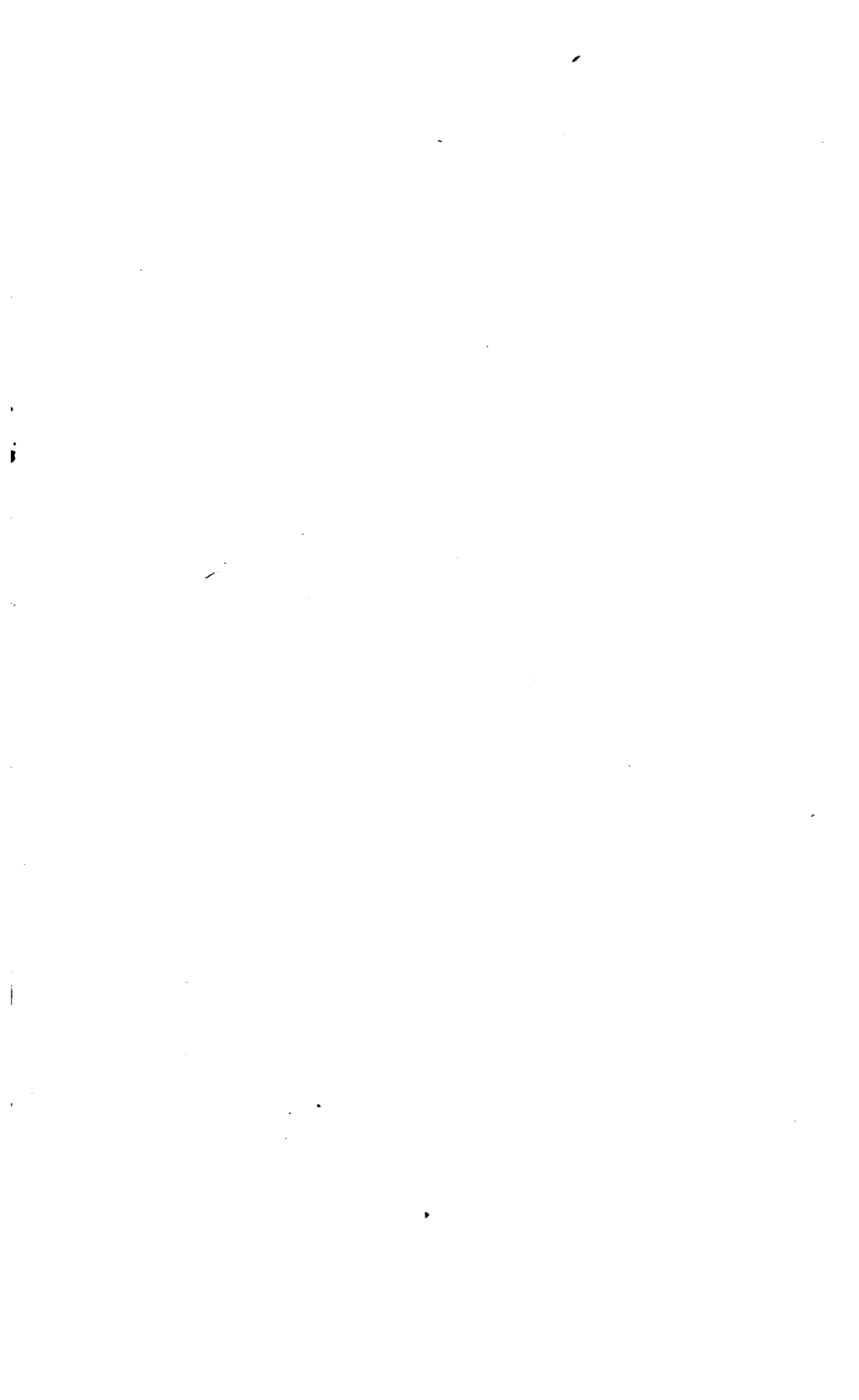
# ERRATA.

Page.	Line.	
18	3	from top ; <i>for</i> potassium <i>read</i> rubidium.
23	20	" bottom ; <i>this article should be entered under</i> De Schweinitz and Dorset.
29	5	" top ; <i>for</i> 79 <i>read</i> 76.
32	1	" " " Föster <i>read</i> Foster.
34	21	" " " Cartenmeister <i>read</i> Gartenmeister.
35	18	" bottom ; " 496 <i>read</i> 196.
37	15	" top ; " Gottsch <i>read</i> Göttisch.
38	2	" " " 192 <i>read</i> 191.
40	12	" " <i>insert</i> Guthzeit, M. See Conrad, M.
42	14	" " <i>for</i> 202 <i>read</i> 203.
42	15	" " " 202 " 203.
42	19	" " <i>add</i> The valency of oxygen, etc., 18, 283.
45	14	" " <i>for</i> H. W. <i>read</i> R. W.
48	19	" bottom , " 5 <i>read</i> 4.
52	12	" top ; " caffeine compounds <i>read</i> caffein compound.
54	8	" " " F. de <i>read</i> T. de.
54	24	" " " 224 <i>read</i> 225.
56	22	" bottom ; " 247 " 147.
56	17	" " " actinium <i>read</i> actinism.
67	4	" top ; <i>after</i> 2, 96 <i>add</i> 4, 206.
67	4	" " <i>the article on</i> tolylmethylketone <i>belongs to</i> MICHAELIS <i>alone</i> .
67	9	" " <i>insert</i> Michler, W. and H. Pattinson. Tetramethylbenzidine (abst.), 6, 87.
68	23	" " <i>for</i> MONNETY COS <i>read</i> MONNET Y COS.
75	1	" bottom ; <i>insert</i> Pattinson, H. See Michler, W.
77	10	" top ; <i>delete</i> Some derivatives of hydrindonaphthene, 6, 160.
77	14	" bottom ; <i>for</i> Smitt <i>read</i> Smett.
84	13	" " " 200 <i>read</i> 199.
85	24	" top ; <i>delete</i> first comma.
85	25	" " <i>for</i> Peligot <i>read</i> Péligot.
91	20	" bottom ; " Smitt <i>read</i> Smett.
92	8	" " <i>insert</i> Smith, H. W. See Dixon, H. B.
94	11	" " <i>for</i> Staedel <i>read</i> Städel.
96	21	" top ; " 230 <i>read</i> 228.
108	14	" bottom ; <i>insert</i> Wright, C. R. A. See also Roberts, W. C.
110	2	" top : <i>for</i> 75 <i>read</i> 74.
118	21	" " " 132 <i>read</i> 133.
121	9	" bottom : <i>after</i> 166, <i>add</i> 5, 245.
122	6	" top ; <i>for</i> 192 <i>read</i> 193.
123	19	" " <i>after</i> 260 <i>add</i> 18, 717, 721.

Page.	Line.	
123	4	from bottom ; <i>for</i> 857 <i>read</i> 587.
126	16	" top ; " 189 " 188.
127	5	" bottom ; <i>add</i> from lead, by hydrochloric acid gas, 18, 1033.
129	23	" " <i>for</i> 1039 <i>read</i> 1038.
129	22	" " " 78 <i>read</i> 278.
129	22	" " " 56 " 156.
129	20	" " " 78 " 278.
131	9	" top ; " 1 " 2.
133	5	" bottom ; " 134 " 135.
135	9	" top ; " 802 " 803.
141	19	" " <i>after</i> 165 <i>add</i> 12, 352.
143	3	" " <i>for</i> 10 <i>read</i> 5.
144	9	" " <i>after</i> (68) <i>add</i> 18, (42).
144	15	" " <i>for</i> one <i>read</i> on.
145	8	" " <i>after</i> 18 <i>delete</i> (abst.).
150	2	" " <i>for</i> 141 <i>read</i> 241.
150	9	" " " 1038 " 1035.
151	22	" bottom ; " lecturer <i>read</i> lecture.
152	21	" " <i>delete</i> 14, 155.
153	19	" top ; <i>for</i> last 84 <i>read</i> 85.
159	15	" " " 3 <i>read</i> 5.
164	12	" bottom ; <i>after</i> from <i>add</i> 16, 697.
166	13	" " <i>for</i> 365 <i>read</i> 364.
167	21	" top ; <i>after</i> 710 <i>add</i> porcelain, 13, 195.
171	2	" bottom ; <i>read</i> and ozone, 2, 34, 147, (abst.), 2, 59.
172	1	" top ; <i>after</i> analysis <i>add</i> 18, 918.
175	3	" " <i>add</i> iridium, industry of (abst.), 7, 66.
175	10	" bottom ; <i>for</i> 271 <i>read</i> 721.
176	5	" " <i>delete</i> 245.
178	10	" " <i>after</i> 801 <i>add</i> from antimony, by hydrochloric acid gas, 18, 1033.
183	8	" " <i>for</i> metyl <i>read</i> methyl.
184	5	" " " 14 <i>read</i> 13.
186	17	" " <i>delete</i> 520.
187	9	" " <i>for</i> 362 <i>read</i> 361.
190	13	" " " herbivora <i>read</i> herbivorae.
194	21	" " <i>after</i> 385 <i>add</i> valence of, 18, 233.
194	4	" " <i>read</i> dioxide, 2, 34, 147, (abst.), 2, 59.
195	8	" " <i>delete</i> 233.
197	24	" " <i>for</i> phenthrene <i>read</i> phenanthrene.
199	18	" " <i>after</i> 210 <i>add</i> 9, 218.
199	12	" " <i>for</i> 295 <i>read</i> 925.
204	6	" top ; <i>after</i> 83 <i>add</i> 90.
204	24	" bottom ; <i>for</i> 2 <i>read</i> 1.
204	4	" " <i>after</i> pea <i>add</i> 18, 583.
204	1	" " " vetch <i>add</i> 18, 583.

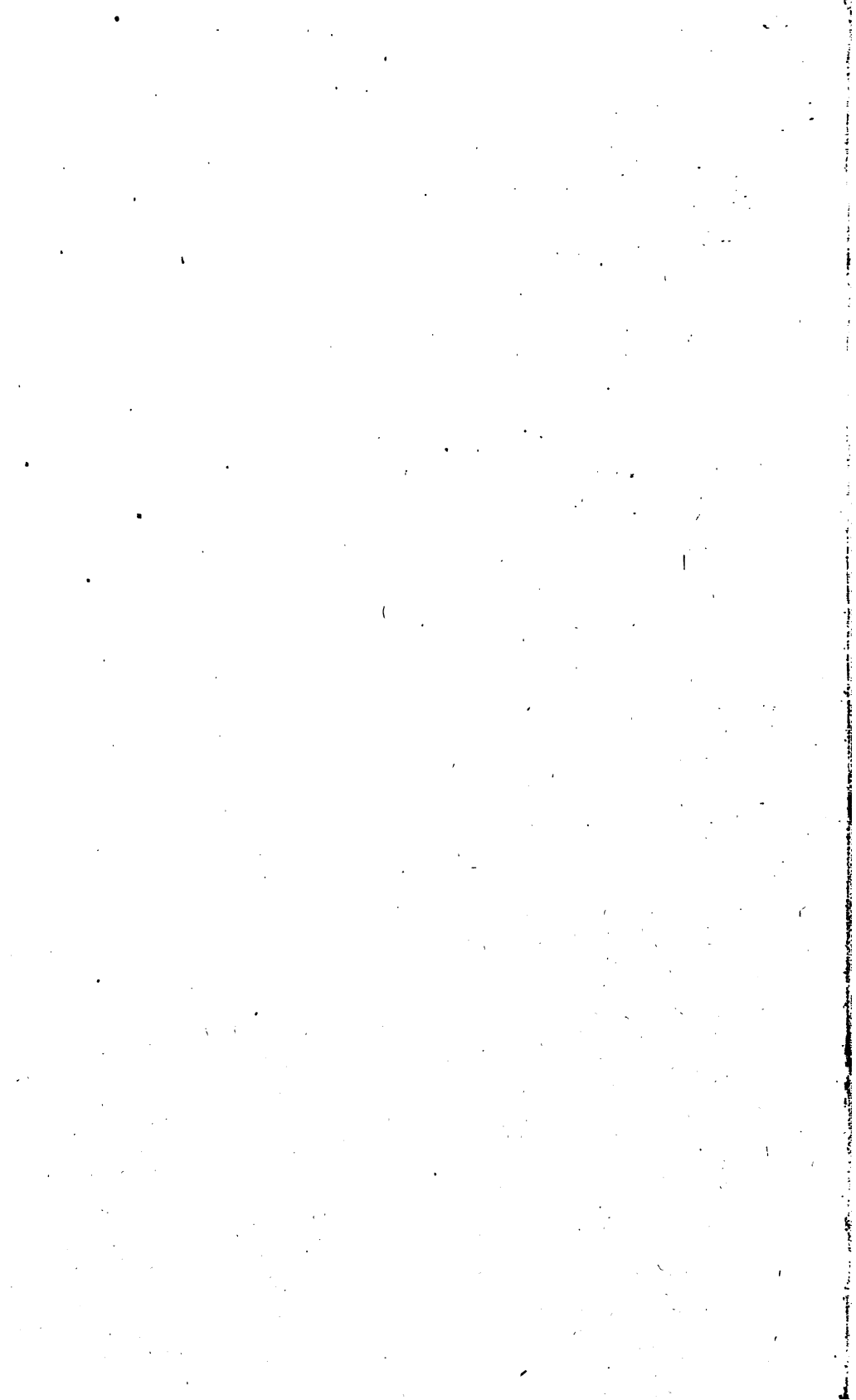
Page.	Line.	
216	10	from top ; <i>after 18 add 170.</i>
217	11	" bottom ; <i>for 1 read 2.</i>
218	23	" " " <i>178 read 187.</i>
220	23	" " <i>after 251 add 942.</i>
221	20	" top ; <i>for tannins read tannin.</i>
224	14	" bottom ; " <i>451 read 541.</i>













41C  
379

